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CRPL-F 247 PART B

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PART B  
SOLAR - GEOPHYSICAL DATA

ISSUED  
MARCH 1965

U. S. DEPARTMENT OF COMMERCE  
NATIONAL BUREAU OF STANDARDS  
CENTRAL RADIO PROPAGATION LABORATORY  
BOULDER, COLORADO



## SOLAR - GEOPHYSICAL DATA

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The descriptive text was republished in November 1964. Addenda have been given in the introduction to each of the CRPL-F Part B reports, December 1964 through February 1965.

Addendum: On page 8, line 3, of the November 1964 Descriptive Text, add Ottawa, Canada, to the group of observatories using the C. S. Warwick method of correcting measured areas of flares.

#### Riometer Absorption Events:

Beginning with data for January 1965, the periods of absorption are reported from the Frobisher Bay, Canada ( $63^{\circ}28'N67^{\circ}23'W$ ) riometer instead of from the South Pole riometer. The equipment is operated by the Canadian Department of Transport in a cooperative program of the Central Radio Propagation Laboratory of the National Bureau of Standards and the Defence Research Telecommunications Establishment, Ottawa, Canada. The equipment operates at 30 Mc/s and uses a zenithal antenna of beamwidth  $\pm 30^{\circ}$  to the half-power points.

The table presents the values as described in the November 1964 Descriptive Text on p. 14, second paragraph, under Riometer Absorption Events.

Frobisher Bay has replaced the South Pole data because the latter program has been de-emphasized. The two stations are close in conjugacy so that the events reported by each are similar as to time of occurrence and intensity.

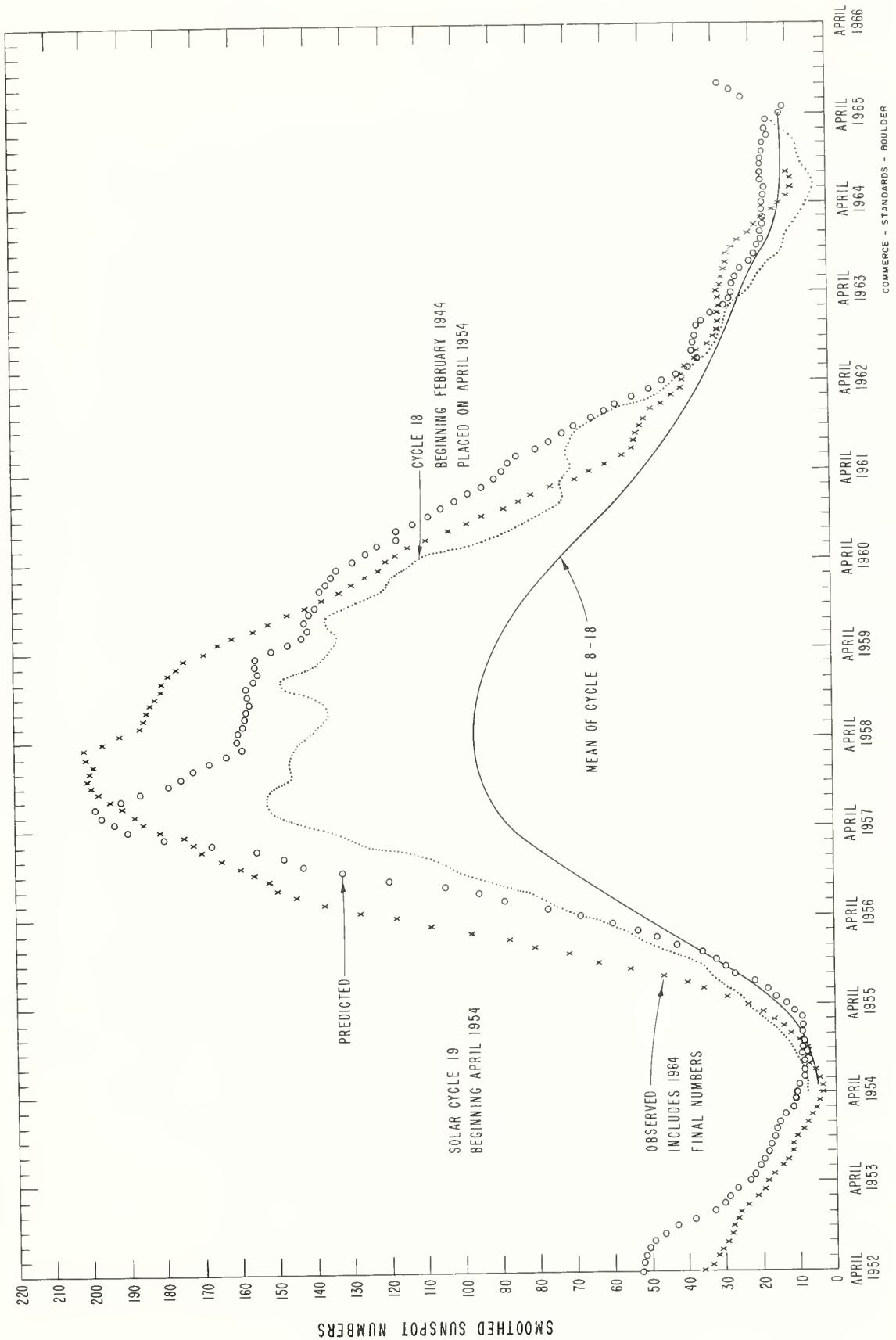
#### Solar Flares:

The more complete listing of November 1964 flares will be published at a later date. Data from several stations normally reporting have yet to be received. Therefore, it is inappropriate to publish a second listing of November flares at this time.

## DAILY SOLAR INDICES

Jan. 1965	American Relative Sunspot Numbers $R_A$
1	24
2	26
3	29
4	30
5	28
6	18
7	13
8	16
9	5
10	2
11	0
12	0
13	0
14	4
15	0
16	4
17	10
18	16
19	16
20	26
21	21
22	8
23	15
24	18
25	24
26	24
27	21
28	19
29	27
30	24
31	15
Mean:	15.6

Feb. 1965	Zürich Provisional Relative Sunspot Numbers $R_Z$	Daily Values Solar Flux at 2800 Mc, Ottawa, Canada Flux	
		S	$S_A$
1	14	78.5	76.2
2	13	79.1	76.8
3	13	78.7	76.4
4	13	77.4	75.2
5	10	76.2	74.1
6	23	76.2	74.1
7	23	77.3	75.2
8	17	75.4	73.4
9	23	75.4	73.4
10	17	75.9	73.9
11	17	73.7	71.8
12	23	73.1	71.2
13	25	72.4	70.6
14	16	71.9	70.1
15	23	72.6	70.8
16	15	73.2	71.4
17	8	73.4	71.6
18	8	72.2	70.5
19	0	72.3	70.6
20	0	71.4	69.8
21	7	71.6	70.0
22	0	71.9	70.3
23	0	73.0	71.5
24	13	74.5	72.9
25	15	74.2	72.7
26	22	73.8	72.3
27	24	76.1	74.6
28	18	76.3	74.8
Mean:	14.3	74.6	72.7



PREDICTED AND OBSERVED SUNSPOT NUMBERS

## ZURICH FINAL RELATIVE SUNSPOT NUMBERS

1964

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
1	0	0	27	10	7	8	7	9	7	17	9	0
2	14	0	8	0	0	8	0	20	8	12	8	0
3	8	0	13	13	0	8	0	17	8	0	8	0
4	7	0	7	0	10	8	8	9	0	0	0	0
5	13	0	7	10	14	0	10	8	0	0	0	7
6	17	0	0	11	11	0	8	7	0	14	7	0
7	20	10	15	15	11	14	7	7	7	20	7	0
8	16	13	9	13	10	0	0	0	20	16	7	8
9	13	18	8	10	7	7	0	0	12	11	0	7
10	15	9	0	9	7	7	0	7	11	0	0	10
11	19	7	14	8	7	14	0	8	11	0	0	12
12	20	0	23	7	0	22	0	21	20	0	9	16
13	27	0	40	7	0	12	0	23	18	0	7	10
14	24	8	32	7	9	18	10	36	11	0	17	17
15	22	13	29	7	17	24	12	30	0	0	8	10
16	16	17	28	7	17	23	11	30	0	0	16	17
17	20	21	20	13	23	13	9	19	0	0	15	27
18	7	15	8	7	11	22	8	9	0	12	19	28
19	14	13	10	0	9	24	0	8	0	11	12	30
20	11	23	11	9	7	19	0	7	0	10	19	29
21	11	39	20	19	7	9	0	7	0	0	21	23
22	11	42	32	17	18	0	0	0	0	0	8	26
23	11	54	30	16	13	0	0	0	0	0	0	16
24	18	44	27	23	11	0	0	0	0	7	8	18
25	17	36	23	12	11	0	0	0	0	8	9	19
26	10	34	20	7	14	0	0	0	0	7	0	14
27	9	34	16	0	8	0	0	0	0	9	0	19
28	24	34	14	0	8	0	0	0	0	0	7	28
29	27	28	7	0	8	7	0	0	0	9	0	38
30	22		7	0	9	7	0	0	7	16	0	21
31	11		7		9		7	7		9		19
Mean	15.3	17.7	16.5	8.6	9.5	9.1	3.1	9.3	4.7	6.1	7.4	15.4

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Yearly Mean = 10.2

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## CALCIUM PLAGE AND SUNSPOT REGIONS

FEBRUARY 1965

Feb. 1965	LAT.	MCMATH PLAGE NUMBER	RETURN OF REGION	CALCIUM PLAGE DATA						SUNSPOT DATA		
				CMP VALUES		HISTORY	AGE (ROTATIONS)	DATE FIRST SEEN (1)	DURATION (DAYS) (1)	CMP VALUES		HISTORY
				AREA	INT					AREA	COUNT	
1.0	N32	7658	New	400	2	b $\nearrow$ d	1	1/27	8	(40)	(2)	b — d
2.0	N33	7659	New	(100)	(1)	$\ell$ $\searrow$ d	1	1/27	3			
2.0	S10	7671	New	(200)	(2)	b — d	1	2/6	$\geq 1$			
3.5	N23	7660	New	400	1.5	$\ell$ $\nearrow$ $\ell$	1	1/28	13			
3.5	S02	7666	New	200	1	b — d	1	1/31	4			
4.0	N09	7661	New	2000	3	$\ell$ $\nearrow$ $\ell$	1	1/28	14	315	1	b — $\ell$
5.5	N28	7664	7630	400	2.5	$\ell$ $\nearrow$ $\ell$	2	1/30	13			
5.6	N19	7665 (2)	7630	900	2	$\ell$ $\nearrow$ d	2	1/30	10			
6.2	N08	7672	New	200	1.5	b $\nearrow$ d	1	2/6	3			
7.2	S19	7669 (2)	New	(100)	(1)	b — d	1	2/5	1			
7.3	N31	7667	New	(200)	(1.5)	b $\searrow$ d	1	$\sim$ 2/2	4			
7.8	N29	7675	New	100	1	b — d	1	2/8	1			
8.5	N19	7673 (2)	New	(200)	(1.5)	b — d	1	2/6	1			
9.4	N01	7688	New	(200)	(2)	b — $\ell$	1	2/15	1			
10.1	N23	7682	New	(300)	(1.5)	b — $\ell$	1	2/13	3			
10.1	N18	7676 (2)	New	100	1.5	b — d	1	2/8	1			
10.2	N09	7668	New	(300)	(1)	$\ell$ $\searrow$ d	1	2/3	3			
10.2	N32	7679 (2)	New	100	1	b — d	1	2/10	1			
10.3	N09	7683	New	(300)	(3)	b — $\ell$	1	2/13	3			
10.9	S29	7686 (2)	New	(200)	(1)	b — d	1	2/14	1			
11.5	N10	7670	New	(200)	(1)	$\ell$ — d	1	2/5	2			
12.6	S34	7680 (2)	New	100	1	b — d	1	2/10	1			
12.9	N24	7674	7643	1300	3	$\ell$ — $\ell$	2	2/6	$\geq 12$	(270)	(1)	b — $\ell$
12.9	S39	7687 (2)	New	100	1.5	b — d	1	2/14	1			
13.1	S07	7684 (2)	New	200	1.5	b — d	1	2/13	1			
13.4	S12	7678 (2)	New	(100)	(1)	b — d	1	2/8	1			
14.1	N08	7681	New	100	1.5	b — d	1	2/12	4			
15.2	N06	7685 (2)	New	100	1	b — d	1	2/13	1			
15.4	N30	7677	New	700	3	$\ell$ — $\ell$	1	$\leq$ 2/10	$\geq 11$	(80)	(1)	b — d
15.4	N08	7689 (2)	New	100	2	b — d	1	2/15	1	(10)	(1)	b — d
18.4	S26	7695	New	300	2.5	b — $\ell$	1	$\sim$ 2/19	$\sim$ 4			
18.9	S03	7693 (2)	New	100	1	b — d	1	2/17	1	(10)	(1)	b — d
19.1	S49	7692 (2)	New	(200)	(2)	b — d	1	2/16	1			
19.1	N32	7691	7646	400	1	$\ell$ — d	3	2/16	5			
19.7	N04	7690 (2)	New	(100)	(1)	b — d	1	2/15	1			
22.5	S29	7701	New	100	1.5	b — d	1	2/22	$\sim$ 2			
23.0	N25	7703 (2)	New	100	1	b — d	1	2/23	1			
23.6	N05	7694	New	(200)	(1)	$\ell$ — d	1	2/17	4			
23.9	N04	7702	New	100	1.5	b — d	1	2/22	2			
24.2	S42	7698	New	200	1	b — d	1	2/21	3			
24.6	N27	7696	7655	700	2.5	$\ell$ — $\ell$	3	$<$ 2/19	$>$ 12			
25.0	N06	7715 (2)	New	(200)	(1.5)	b — $\ell$	1	3/2	1			
25.6	N24	7697	7655	500	1.5	$\ell$ — $\ell$	3	2/19	$>$ 12			
26.0	N05	7700 (2)	New	(200)	(1.5)	b — d	1	2/21	1			
26.2	S23	7699	New	(100)	(1)	b — d	1	2/21	2			
26.5	S11	7705 (2)	New	100	1	b — d	1	2/26	1			
27.3	N05	7713 (2)	New	(100)	(1.5)	b — d	1	3/1	1			
28.1	S25	7706 (2)	New	100	1	b — d	1	2/26	1			

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(1) Due to very poor weather conditions, no calcium spectro heliograms were secured at the McMath-Hulbert Observatory on February 1, 7, 9, 18, 24, and 25, 1965.

(2) These very small and ephemeral plages last for only one day.

# MT. WILSON MAGNETIC CLASSIFICATIONS OF SUNSPOTS

11b

FEBRUARY 1965

Feb. 1965	TIME MEAS. UT	LAT	MER DIST	TYPE	Feb. 1965	TIME MEAS UT	LAT	MER DIST	TYPE
1	1940	N08	E28	$\beta$ p	13	1640	N10 N21	W45 W15	$\alpha$ f $\alpha$ p
2	1805	N07	E16	$\beta$ $\gamma$			N29	E20	$\alpha$ p
3	No Obs				14	1800	N21 N29	W28 E07	$\alpha$ p $\alpha$ p
4	2210	N07	W17	$\alpha$ p	15	2220	N21 N29	W45 W09	$\alpha$ p $\alpha$ p
5-6	No Obs								
8	0005	N08	W58	$\alpha$ p	16	1815	N21 N30	W55 W18	$\alpha$ p $\alpha$ p
	1810	N22 N08 N21	E59 W69 E49	$\alpha$ p $\alpha$ p $\alpha$ p	17	No Obs			
9	No Obs				18-23	No Spots			
10	2200	N21 N30	E20 E55	$\alpha$ p $\alpha$ p	24-25	No Obs			
11	No Obs				26	1820	S04 N08	E37 E50	$\alpha$ p $\alpha$ p
12	2330	N20 N08 N30	W06 E17 E29	$\beta$ p $\alpha$ f $\alpha$ p	27	No Obs			
					28	1640	S04 N07	E13 E25	$\beta$ $\alpha$ p

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Erratum: In CRPL-F 243 Part B, issued November 1964, the spot group reported at S13 W13 on October 7, 1964, was erroneously marked as a new cycle group. It was an old cycle group. The longitude also was incorrect. It should be W27, not W13.

# PROVISIONAL CORONAL LINE EMISSION INDICES

JANUARY 1965

CMP Jan 1965	North East quadrant (observed 7 days earlier)				South East quadrant (observed 7 days earlier)				South West quadrant (observed 7 days later)				North West quadrant (observed 7 days later)			
	G <sub>6</sub>	G <sub>1</sub>	R <sub>6</sub>	R <sub>1</sub>	G <sub>6</sub>	G <sub>1</sub>	R <sub>6</sub>	R <sub>1</sub>	G <sub>6</sub>	G <sub>1</sub>	R <sub>6</sub>	R <sub>1</sub>	G <sub>6</sub>	G <sub>1</sub>	R <sub>6</sub>	R <sub>1</sub>
1	x	x	x	x	x	x	x	x	0	0	19	24	5	8	19	22
2	9	12	18	22	4	6	14	21	3	6	28	31	7	12	32	40
3	x	x	x	x	x	x	x	x	0	0	17	20	3	6	13	24
4	x	x	x	x	x	x	x	x	1	3	23	26	9	12	19	22
5	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
6	28	73	x	x	0	0	x	x	x	x	x	x	x	x	x	x
7	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
8	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
9	x	x	x	x	x	x	x	x	0	0	x	x	35	64	x	x
10	23	41	16	17	6	10	11	14	5	9	12	14	21	31	16	24
11	x	x	x	x	x	x	x	x	4	14	x	x	7	8	x	x
12	10	15	17	22	14	36	14	15	11	15	5	7	8	9	11	13
13	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
14	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
15	10	22	14	17	0	0	12	16	x	x	x	x	x	x	x	x
16	5	6	34	48	7	10	26	35	0	0	6	8	15	54	20	34
17	0	0	20	34	1	3	13	18	5	6	28	36	10	16	21	31
18	4	6	4	6	5	9	5	9	x	x	x	x	x	x	x	x
19	x	x	x	x	x	x	x	x	8	8	16	22	12	15	15	19
20	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
21	x	x	x	x	x	x	x	x	2	5	0	0	10	15	0	0
22	x	x	x	x	x	x	x	x	5	6	28	35	13	29	28	35
23	20	34	x	x	0	0	x	x	x	x	x	x	x	x	x	x
24	17	65	12	16	0	0	12	16	2	4	x	x	7	11	x	x
25	0	0	x	x	0	0	x	x	x	x	x	x	x	x	x	x
26	9	11	16	22	5	9	11	14	x	x	x	x	x	x	x	x
27	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
28	x	x	x	x	x	x	x	x	0	0	11	16	26	76	19	27
29	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
30	2	4	16	20	0	0	13	17	x	x	x	x	x	x	x	x
31	9	11	19	25	3	5	16	24	x	x	x	x	x	x	x	x

x = no observations

\* = yellow line emission

a = index computed from low weight data

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# SOLAR FLARES

FEBRUARY 1965

OBSERVATORY	DATE	OBSERVED		LOCATION			DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS			REMARKS
		UNIVERSAL TIME		APPROX. LAT.	MOMENT MER DIST					TIME — UT	MEAS. AREA Sq. Deg	COOR. AREA Sq. Deg	
		START	END		MAX PHASE	REGION							
[ ]	1965												
	ARCE	02	0920 E	1000 D		N08 E22	7661	1-	1	0950	.49	.55	
	SACP	02	1510	1521	1517	N07 E15	7661	1-	C		.33	.32	17
	MCMA	02	1614	1622	1616	N08 E12	7661	1-	2	1616	.50	.50	DH
	SACP	02	1620 E	1629	1620	N07 E13	7661	1-	C		.29	.28	17
	SACP	02	1656	1719	1711	N08 E13	7661	1-	C		.75	.74	18
	SACP	02	1722	1753	1731	N08 E13	7661	1-	C		.29	.28	16
	SACP	02	1733	1800 U	1744	N06 E15	7661	1-	C		.33	.32	19
	SACP	02	1853	1917	1905	N07 E11	7661	1-	C		1.08	1.06	19
	LOCK	02	1916	1939	1931	N08 E12	7661	1-	C		.16	.16	19
[ ]	MCMA	02	1919	1945	1930	N10 E10	7661	1-	C	1930	.20	.20	20
	LOCK	02	2043	2109	2054	N08 E10	7661	1-	1	1929	.20	.20	DH
	SACP	02	2050	2057	2052	N09 E09	7661	1-	C	2054	.60	.60	H
	LOCK	02	2131	2201	2140	N07 E10	7661	1-	C		1.04	1.02	18
	LOCK	02	2306	2326	2313	N08 E09	7661	1-	C	2140	.50	.50	H
	MITK	02	2311 E	2318	2312	N06 E08	7661	1-	C	2313	.50	.50	J
						N07 E09	7661	7 E	1				
	LOCK	03	0025	0034	0029	N08 E08	7661	1-	C	0029	.70	.70	20
	MITK	03	0027	0031	0029	N07 E08	7661	1-	C		.50	.50	
	LOCK	03	0041	0053	0046	N09 E09	7661	1-	1	0046	.30	.30	10
[ ]	MCMA	03	1715	1732	1720	N08 E03	7661	1-	1	1720			LS
	ARCE	04	0855 E	0925 D		N08 W05	7661	1-	2	0905	1.70	1.76	
	SACP	05	1613	1629	1621	N06 W24	7661	1-	C		.99	1.01	17
	SACP	05	1750	2000 U	1808	N07 W25	7661	2	C		1.51	1.93	30
	MCMA	05	1750	2006 D	1810	N08 W25	7661	136 D	2	1810	7.50	8.50	FS
	ARCE	06	0942 E	1000 D		N10 W33	7661	1-	4	0942	.56	.70	
	MITK	07	0330	0347	0336	N11 W42	7661	1-	C				
	LOCK	07	1819	1848	1826	N09 W51	7661	1-	C	1826	3.60	4.50	FL
	MITK	07	2333	2346	2338	N22 W52	7660	1-	C				
	[ ]	LOCK	08	1831	1903	1845	N30 E90	7667	1-	C	1845	.30	1.50
[ ]	MCMA	08	1833	2000 D	1846	N31 E90	7667	1-	1	1846	.50	.80	K
	LOCK	08	2029	2117	2038	N05 W65	7661	1-	C	2038	.50	.80	L
	ARCE	10	0925 E	1013 D		N20 W90	7660	48 D	1	1002	.72	4.09	
	CATA	10	1020	1045 D	1022	N18 W90	7660	25 D	1	1022			
	LOCK	11	1913	1937	1924	N29 E41	7677	1-	C	1924	.20	.30	10
	LOCK	11	2110	2127	2116	N29 E41	7677	1-	C	2116	.20	.30	10
	KAND	15	1333	1338		S22 W85		1-					
	LOCK	16	1700	1716	1707	N32 E01	7677	1-	C	1707	.10	.10	H
	LOCK	16	2006	2019	2010	S04 E45		1-	C	2010	.20	.20	10
	LOCK	16	2244	2257	2249	S01 E27	7693	1-	C	2249	.10	.10	H
[ ]	LOCK	17	2316	2336	2323	N23 W60	7674	1-	C	2323	.40	.70	10

COMMENCE - STANDARDS - BOULDER

# SOLAR FLARES

FEBRUARY 1965

OBSERVATORY	DATE FEB	OBSERVED UNIVERSAL TIME		LOCATION		DURA- TION — MINUTES	IM- POR- TANCE	OBS. COND.	MEASUREMENTS				REMARKS	
		START END	MAX PHASE	APPROX LAT. MER DIST	MEASUREMENT FLARE REGION				TIME — UT	MEAS. AREA Sq Deg.	CORR. AREA Sq Deg.	MAX WIDTH H <sub>g</sub>		MAX INT °
SACP	17	2319	2332	N25 W64	7674		1-	C		.46	.88		16	
	18	1016	1025	N31 E90	7696		1-							
	18	1026	1032	N26 E90	7696		1-							
	18	1116	1121	N02 W50			1-							
	18	1535	1547	N05 E66	7694		1-	C		.29	.50		17	
	18	1759	1837	S31 W13	7695		1-	C	1815	.20	.20		10	H
	18	2044	2102	N43 W30			1-	C	2054	.30	.40		10	H
	18	2147	2205	N20 W32			1-	C	2152	.40	.40		20	H
	18	2220	2232	N02 E58	7694		1-	C		.38	.55		17	
	19	1635	1650	S23 W13	7695		1-	C	1638	.20	.20			DH
LOCK SACP LOCK	20	2218	2238	N30 E13			1-	C	2225	.20	.20		10	
	20	2256	2307	N27 E64	7697		1-	C		.27	.53		18	
	20	2256	2310	N26 E59	7697		1-	C	2302	.40	.70		10	
KAND LOCK	23	0653 E 2310	0808 2030	S05 E90 N32 W90	7704	75 D	2 1-	C	2017	.30	1.50		20	
	23	2010	2030	N32 W90			1-	C	2033	.30	.50		10	
LOCK	24	2026	2041	S03 E61	7704		1-	C						
SACP	26	2123	2142	N16 E54	7707		1-	C		.12	.18		17	
MITK CATA	27	0553	0604	S15 E35	7709		1-	C		.16	.42		155	G
	27	0845	0915 D	N28 E74	7710		1- □	C	0846					
	27	0855 E	0904 D	N35 E21		9 D								
ARCE	27	1015 E	1020 D	N36 E72	7710		1-	2	1015	.26	.80			
ARCE	27	1015 E	1020 D	N24 E47	7707		1-	2	1015	.65	1.06			
ARCE	27	1015 E	1020 D	S01 E30	7704		1-	2	1015	.20	.23			
MCMA	27	1319 E	1417 D	N32 E62	7710		1-	2 P	1350	.40				S
LOCK LOCK MCMA	28	2010	2025	N30 E44	7710		1-	C	2015	.40	.50		10	
	28	2042	2104	N21 E22	7707		1-	C	2047	.50	.50		20	
	28	2044	2057	N23 E29	7707		1-	3 C	2048	.40	.50			ES

COMMERCE - STANDARDS - BOULDER

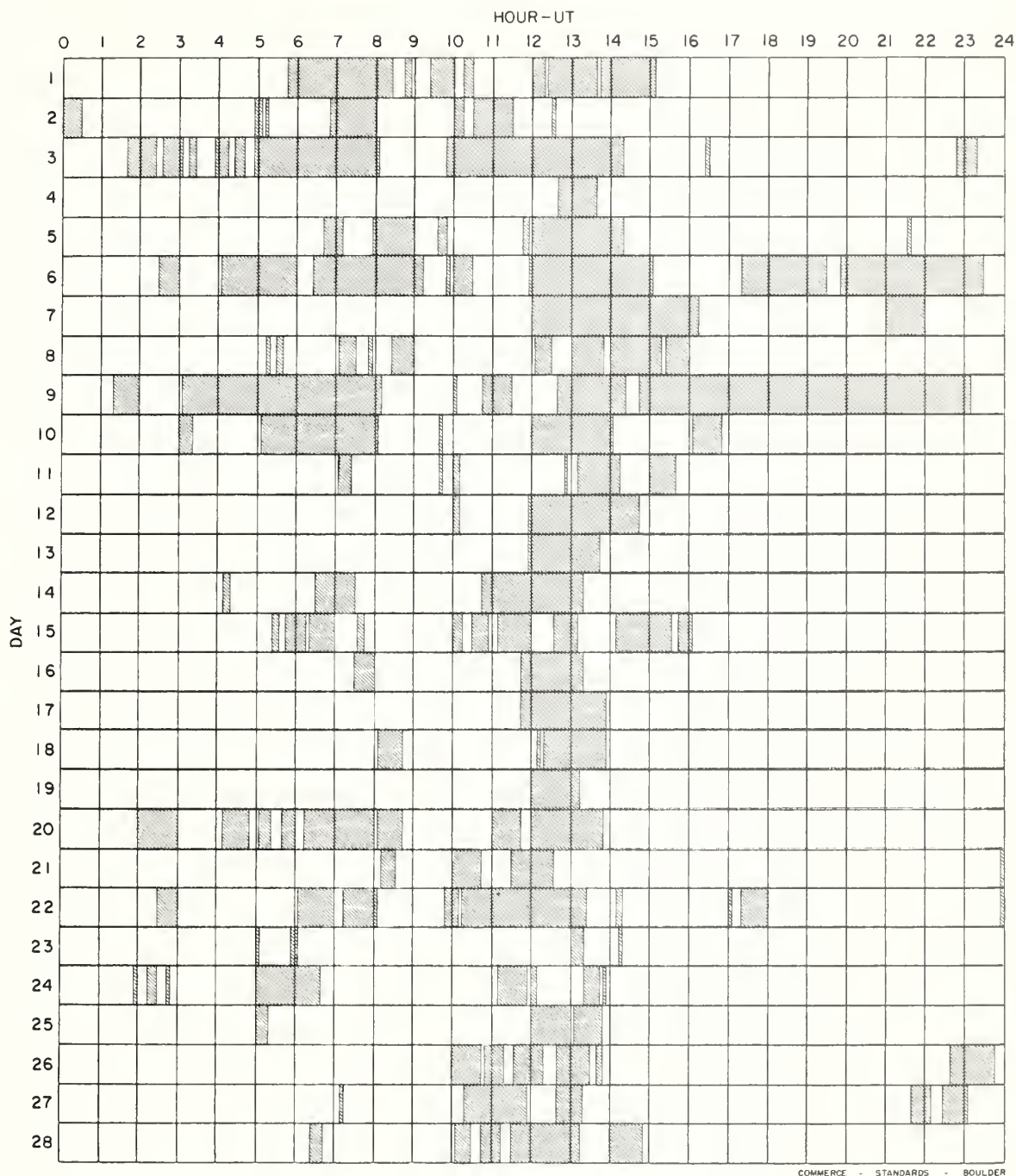
Errata: In CRPL-F 244 Part B, page IIII, for the two OTTA flares on August 30, 1964 the area measurements should be in the MEAS. AREA not CORR. AREA column.

In CRPL-F 246 Part B, pages IIIa, IIIb, remove "0" from remarks column for ARCE flares on January 5, 6, 7, 20, and 22, 1965. Also remove "B, G or D" entries under OBS. COND for KAND flares on January 6, 18, 21, 22, and 31, 1965.

# INTERVALS OF NO FLARE PATROL OBSERVATIONS PROVISIONAL

IIIc

FEBRUARY 1965



## Observatories Included:

Arcetri	Herstmonceux	Kandilli	McMath-Hulbert	Sacramento Peak
Bucharest	Ikomasan	Lockheed	Mitaka	Tortosa
Catania	Istanbul	Manila	Ondrejov	Wroclaw

## AVERAGE X-RAY FLUX

NRL

FEBRUARY 1964

AVERAGE X-RAY FLUX			
Date	44-60A	8-12A	0-8A
Feb. 1	$2.7 \times 10^{-2}$	$<1.7 \times 10^{-4}$	$<1.3 \times 10^{-4}$
2	$2.3 \times 10^{-2}$	$<1.5 \times 10^{-4}$	$<1.2 \times 10^{-4}$
3	$2.3 \times 10^{-2}$	$<1.4 \times 10^{-4}$	$<1.2 \times 10^{-4}$
4	$2.5 \times 10^{-2}$	$<1.2 \times 10^{-4}$	$<1.1 \times 10^{-4}$
5	$2.5 \times 10^{-2}$	$<1.2 \times 10^{-4}$	$<1.1 \times 10^{-4}$
6	$2.6 \times 10^{-2}$	$<1.1 \times 10^{-4}$	$<1.0 \times 10^{-4}$
7	$2.5 \times 10^{-2}$	$<1.1 \times 10^{-4}$	$<1.0 \times 10^{-4}$
8	$2.6 \times 10^{-2}$	$<1.1 \times 10^{-4}$	$<1.0 \times 10^{-4}$
9	$2.6 \times 10^{-2}$	$1.2 \times 10^{-4}$	$<1.0 \times 10^{-4}$
10	$2.7 \times 10^{-2}$	$1.7 \times 10^{-4}$	$<1.0 \times 10^{-4}$
11	$2.8 \times 10^{-2}$	$3.3 \times 10^{-4}$	$<1.0 \times 10^{-4}$
12	$2.9 \times 10^{-2}$	$2.4 \times 10^{-4}$	$<1.1 \times 10^{-4}$
13	$2.8 \times 10^{-2}$	$1.8 \times 10^{-4}$	$<1.2 \times 10^{-4}$
14	$2.8 \times 10^{-2}$	$<1.7 \times 10^{-4}$	$<1.2 \times 10^{-4}$
15	$2.8 \times 10^{-2}$	$<1.8 \times 10^{-4}$	$<1.3 \times 10^{-4}$
16	$2.5 \times 10^{-2}$	$<2.0 \times 10^{-4}$	$<1.5 \times 10^{-4}$
17	$2.6 \times 10^{-2}$	$<2.1 \times 10^{-4}$	$<1.6 \times 10^{-4}$
18	$2.5 \times 10^{-2}$	$<2.2 \times 10^{-4}$	$<1.7 \times 10^{-4}$
19	$2.5 \times 10^{-2}$	$<2.3 \times 10^{-4}$	$<1.8 \times 10^{-4}$
20	$2.6 \times 10^{-2}$	$<2.4 \times 10^{-4}$	$<1.7 \times 10^{-4}$
21	$2.6 \times 10^{-2}$	$<2.5 \times 10^{-4}$	$<1.7 \times 10^{-4}$
22	$3.3 \times 10^{-2}$	$9.0 \times 10^{-4}$	$<1.7 \times 10^{-4}$
23	$4.2 \times 10^{-2}$	$6.5 \times 10^{-4}$	$<1.7 \times 10^{-4}$
24	$4.2 \times 10^{-2}$	$7.6 \times 10^{-4}$	$<1.7 \times 10^{-4}$
25	$4.0 \times 10^{-2}$	$6.6 \times 10^{-4}$	$<1.6 \times 10^{-4}$
26	$4.1 \times 10^{-2}$	$6.1 \times 10^{-4}$	$<1.5 \times 10^{-4}$
27	$4.2 \times 10^{-2}$	$5.9 \times 10^{-4}$	$<1.4 \times 10^{-4}$
28	$4.3 \times 10^{-2}$	$6.7 \times 10^{-4}$	$<1.3 \times 10^{-4}$
29	$4.1 \times 10^{-2}$	$6.4 \times 10^{-4}$	$<1.2 \times 10^{-4}$

OUTSTANDING EVENTS					
Date	Times of Observation	44-60A	8-12A	0-8A	Flare
Feb. 11	1410 1421	$3.1 \times 10^{-2}$	$0.5 \times 10^{-3}$	$0.2 \times 10^{-3}$	1-
22	2209 2223	$6.3 \times 10^{-2}$	$1.3 \times 10^{-3}$	$1.0 \times 10^{-3}$	1-
	2351 0005	$4.8 \times 10^{-2}$	$0.8 \times 10^{-3}$	N*	
23	0135 0149	$4.5 \times 10^{-2}$	$0.7 \times 10^{-3}$	$0.5 \times 10^{-3}$	
	0658 0714	$6.0 \times 10^{-2}$	$1.2 \times 10^{-3}$	$1.2 \times 10^{-3}$	1-
	2019 2033	$5.2 \times 10^{-2}$	-		
	2035 2045	$4.8 \times 10^{-2}$	$0.7 \times 10^{-3}$	-	
	2218 2233	$4.6 \times 10^{-2}$	$0.8 \times 10^{-3}$	$0.6 \times 10^{-3}$	1-
	2234 2246	$6.2 \times 10^{-2}$	$0.8 \times 10^{-3}$	$0.8 \times 10^{-3}$	1-
24	0634 0650	$5.0 \times 10^{-2}$	$1.1 \times 10^{-3}$	-	1-
26	0201 0206	$4.0 \times 10^{-2}$	$0.8 \times 10^{-3}$	$0.5 \times 10^{-3}$	
28	1757 1813	$4.4 \times 10^{-2}$	$0.7 \times 10^{-3}$	$0.4 \times 10^{-3}$	
	2300 2315	$4.5 \times 10^{-2}$	$0.8 \times 10^{-3}$	$0.4 \times 10^{-3}$	
29	0431 0443	$4.0 \times 10^{-2}$	$0.4 \times 10^{-3}$	$0.4 \times 10^{-3}$	
	0617 0631	$3.7 \times 10^{-2}$	$0.4 \times 10^{-3}$	$0.4 \times 10^{-3}$	

\* N means signal observed in noise.

COMMERCE - STANDARDS - BOULDER

## AVERAGE X-RAY FLUX

NRL

FEBRUARY 1964

TIMES OF OBSERVATION											
1	0725 2738	11 (cont'd)	0646 0653	15 (cont'd)	1119 1131	20 (cont'd)	0557 0613	25 (cont'd)	0352 0403		
	1239 1256		1040 1056		1929 1945		0630 0647		0530 0547		
	1427 1438		1221 1239		2115 2131		0817 0833		0643 0658		
	1756 1808		1410 1421		2248 2318		1004 1042		0718 0733		
	1947 1953		1603 1610				1829 1845		1729 1745		
2	1249 1307		2037 2053	16	0035 0052		1914 1928		1816 1830		
	1439 1446				0217 0236		2016 2030		2051 2118		
	1805 1818	12	0326 0342		0359 0407		2137 2218		2122 2308		
			0507 0514		0425 0442		2336 0007				
3	1112 1117		0655 0703		0523 0532			26	0017 0036		
	1258 1325		0815 0831		0543 0610	21	0118 0135		0201 0219		
	1440 1454		0915 0919		0739 0808		0301 0325		0347 0410		
	1813 1826		1050 1116		0926 1009		0449 0456		0507 0523		
4	1121 1138		1240 1246		1129 1155		0606 0623		0540 0555		
	1308 1337		1419 1433		1310 1325		0639 0655		0727 0743		
	1450 1504		1901 1917		1500 1510		0753 0806		0913 0930		
	1638 1652		2047 2103		1641 1655		0826 0842		1059 1115		
	1823 1836		2318 2332		1753 1808		1038 1052		1738 1754		
5	0619 0634		2357 0013		1937 1951		1653 1708		1826 1841		
	1133 1147				2021 2038		2035 2040		2056 2128		
	1312 1343	13	0009 0024		2208 2224		2146 2227		2248 2317		
	1647 1653		0156 0211		2301 2325		2346 0001				
	1835 1844		0334 0351	17	0042 0101			22	0003 0017	27	0027 0106
6	0956 1007		0519 0525		0226 0245				0210 0216		
	1140 1156		0913 0928		0531 0543		0139 0144		0222 0235		
	1327 1355		1059 1125		0715 0732		0615 0632		0356 0419		
	1843 1849		1419 1433		0949 1006		0649 0705		0549 0613		
7	0048 0101		1604 1616		1140 1204		1703 1717		0736 0752		
	1149 1206		1912 1926		1802 1817		1847 1903		0923 0939		
	1338 1346		2056 2111		1947 2003		2034 2049		1603 1617		
	1508 1524		2234 2245		2135 2149		2118 2132		1748 1802		
	1707 1720		2328 2341		2218 2233		2209 2225		1930 1950		
	1854 1904	14	0017 0033		2258 2337		2351 0010		2018 2033		
8	0644 0701		0205 0218					23	2111 2138		
	1013 1027		0344 0350	18	0052 0110				2251 2315		
	1159 1228		0528 0533		0234 0257		0132 0149				
	1532 1538		0553 0608		0422 0427		0314 0329	28	0035 0052		
	1716 1723		0648 0703		0540 0553		0512 0528		0217 0222		
9	0510 0521		0834 0848		0612 0628		0658 0714		0232 0244		
	0838 0847		0922 0938		0758 0815		0845 0901		0525 0541		
	1021 1038		1108 1134		0959 1029		1032 1055		0558 0615		
	1208 1222		1251 1307		1140 1155		1857 1912		0745 0801		
	1351 1407		1439 1449		1957 2009		2019 2059		1117 1133		
	1540 1547		1617 1624		2142 2146		2208 2246		1611 1626		
	1728 1733		1736 1749		2314 2333			24	0007 0019		
	2018 2036		1918 1935						0141 0201		
10	0307 0324		2005 2018	19	0059 0118				0323 0335		
	1218 1247		2108 2122		0245 0307				0521 0537		
	1550 1600		2247 2309		0436 0451				0634 0650		
	1736 1742	15	0017 0043		0621 0637				0708 0719	29	0043 0101
	2028 2041		0217 0246		0825 0840				1720 1733		0228 0234
	2337 2353		0352 0414		0954 1011				1806 1818		0348 0404
11	0147 0152		0538 0617		2128 2157				1907 1922		0431 0443
	0459 0506		0657 0713		2327 2343				2028 2109		0617 0631
			0730 0757	20	0109 0128				2227 2258		1808 1822
			0931 0947		0253 0258						1937 2009
					0438 0500						2124 2138
											2144 2158
											2318 2347

## AVERAGE X-RAY FLUX

NRL

MARCH 1964

AVERAGE X-RAY FLUX			
Date	44-60A	8-12A	0-8A
Mar. 1	$3.9 \cdot 10^{-2}$	$5.6 \cdot 10^{-4}$	$< 1.1 \cdot 10^{-4}$
2	$3.5 \cdot 10^{-2}$	$4.4 \cdot 10^{-4}$	$< 1.1 \cdot 10^{-4}$
3	$3.1 \cdot 10^{-2}$	$2.8 \cdot 10^{-4}$	$< 1.0 \cdot 10^{-4}$
4	$3.0 \cdot 10^{-2}$	$3.6 \cdot 10^{-4}$	$< 1.0 \cdot 10^{-4}$
5	$2.9 \cdot 10^{-2}$	$< 1.1 \cdot 10^{-4}$	$< 1.0 \cdot 10^{-4}$
6	$2.9 \cdot 10^{-2}$	$1.1 \cdot 10^{-4}$	$< 1.0 \cdot 10^{-4}$
7	$3.0 \cdot 10^{-2}$	$1.2 \cdot 10^{-4}$	$< 1.0 \cdot 10^{-4}$
8	$3.0 \cdot 10^{-2}$	$< 1.3 \cdot 10^{-4}$	$< 1.0 \cdot 10^{-4}$
9	$2.8 \cdot 10^{-2}$	$1.4 \cdot 10^{-4}$	$< 1.1 \cdot 10^{-4}$
10	$2.8 \cdot 10^{-2}$	$< 1.5 \cdot 10^{-4}$	$< 1.2 \cdot 10^{-4}$
11	$2.8 \cdot 10^{-2}$	$1.8 \cdot 10^{-4}$	$< 1.5 \cdot 10^{-4}$
12	$3.1 \cdot 10^{-2}$	$2.4 \cdot 10^{-4}$	$< 1.7 \cdot 10^{-4}$
13	$3.3 \cdot 10^{-2}$	$< 3.2 \cdot 10^{-4}$	$< 2.2 \cdot 10^{-4}$
14	$3.3 \cdot 10^{-2}$	$< 5 \cdot 10^{-4}$	$< 3 \cdot 10^{-4}$
15	$3.7 \cdot 10^{-2}$	$< 10 \cdot 10^{-4}$	$< 4 \cdot 10^{-4}$
16	$4.3 \cdot 10^{-2}$	$< 17 \cdot 10^{-4}$	$< 7 \cdot 10^{-4}$

OUTSTANDING EVENTS					
Date	Times of Observation	44-60A	8-12A	0-8A	Flare
March 14	1631 1643	$4.6 \cdot 10^{-2}$	$< 6 \cdot 10^{-4}$	$< 3.5 \cdot 10^{-4}$	1
	1641 1647	$4.1 \cdot 10^{-2}$	$< 6 \cdot 10^{-4}$	$< 3.5 \cdot 10^{-4}$	1
	1646 1700	$5.8 \cdot 10^{-2}$	$< 6 \cdot 10^{-4}$	$< 3.5 \cdot 10^{-4}$	1
15	1637 1652	$< 26 \cdot 10^{-2}$	Photometer not	$6.8 \cdot 10^{-3}$	2
	1651 1706	$< 26 \cdot 10^{-2}$	viewing	$6.8 \cdot 10^{-3}$	2
	1652 1706	$< 24 \cdot 10^{-2}$	sun due	-	2
	1706 1719	$> 26 \cdot 10^{-2}$	to large	$4.7 \cdot 10^{-3}$	2
	1834 1848	$12 \cdot 10^{-2}$	Aspect	$< 8 \cdot 10^{-4}$	2
	1838 1852	$12 \cdot 10^{-2}$	Angle	$< 8 \cdot 10^{-4}$	2
	1854 1908	$12 \cdot 10^{-2}$		$< 8 \cdot 10^{-4}$	2
	2028 2037	$8 \cdot 10^{-2}$		$< 8 \cdot 10^{-4}$	2

COMMERCE - STANDARDS - BOULDER

## AVERAGE X-RAY FLUX

NRL

MARCH 1964

TIMES OF OBSERVATION											
1	0048	0110	5 (cont'd)	0655	0711	9 (cont'd)	0359	0415	12 (cont'd)	1943	2018
	0234	0241		0841	0858		0545	0601		2122	2141
	0430	0447		1707	1722		0735	0748		2304	2328
	0544	0558		1840	1909		0918	0932			
	0618	0634		2027	2058		1557	1613	13	0054	0119
	0804	0821		2218	2247		1734	1759		0249	0306
	1445	1459					1910	1948		0436	0453
	1629	1645	6	0102	0115		2104	2137		0623	0639
	1816	1831		0145	0201		2238	2301		0808	0825
	1947	2018		0330	0347					0955	1008
	2137	2209		0704	0721	10	0022	0038		1302	1317
	2317	2335		0858	0907		0221	0238		1625	1637
				1345	1359		0408	0424		1800	1839
2	0055	0125		1716	1731		0557	0611		1943	2028
	0244	0310		1847	1919		1420	1436		2130	2152
	0440	0456		2037	2108		1607	1622		2313	2345
	0813	0830		2217	2234		1739	1809			
	1945	2028		2240	2256		1927	1944	14	0445	0502
	2143	2201		2355	0011		2007	2125		1313	1329
	2339	2345					2130	2302		1631	1700
			7	0007	0019		2317	2331		1806	1848
				0142	0155					2009	2037
3	0449	0506		0527	0543	11	0032	0047		2146	2225
	0636	0652		0900	0907		0240	0254		2322	2338
	1648	1704		1541	1555		0419	0434		2355	0008
	1829	1850		1725	1741		0934	0945	15	0131	0144
	1958	2038		1856	1928		1429	1445		0318	0334
	2157	2227		2047	2058		1617	1631		0455	0512
	2334	2352		2102	2118		1806	1819		1508	1522
4	0120	0126		2150	2201		1933	2008		1639	1710
	0459	0515		2227	2243		2117	2135		1824	1843
	0832	0848		2249	2306		2255	2319		2018	2028
	1128	1134								2149	2156
	1511	1527	8	0005	0015	12	0043	0056		2333	2347
	1657	1712		0349	0406		0153	0210			
	1819	1859		0536	0553		0240	0310	16	0144	0150
	2006	2048		0723	0739		0355	0407		0653	0707
	2159	2236		1547	1600		0427	0443		1145	1159
	2342	0001		1858	1938		0613	0630		1517	1532
				2051	2128		0759	0816		1637	1719
5	0008	0024		2237	2252		0945	0959		1834	1908
	0129	0135					1439	1454		2023	2037
	0321	0338	9	0013	0043		1626	1641		2155	2212
	0508	0524		0206	0229		1746	1819		2343	2356

## IONOSPHERIC EFFECTS OF SOLAR FLARES

SHORT WAVE RADIO FADEOUTS      SUDDEN PHASE ANOMALIES  
 SUDDEN COSMIC NOISE ABSORPTION      SUDDEN ENHANCEMENTS OF SIGNAL  
 SUDDEN ENHANCEMENTS OF ATMOSPHERICS      SUDDEN FREQUENCY DEVIATIONS  
 SOLAR NOISE BURSTS AT 18 Mc/s

JANUARY 1965

JAN 1965	UNIVERSAL TIME			TYPE SWF IMP	IMPORTANCE						BUR	WIDE SPREAD INDEX	STATIONS	KNOWN FLARE
	START	END	MAX		ABS	SCNA	SEA	SPA	SES	SFD				
[03 03 03	1006 1011 1114	1011 1023 1117	1013	4							1 1 1	1 1 1	RO RO RO	
[28 28 28	0215 0217 0310	0248 0310D 0350	0227 0222 0315	G				43 36				4 1 1	MA,CA MA(NPG43) MA(NPG36)	0217 0217
29	2129	2131	2130							03		1	BO(WWV10-0.3,WWV15-0.2)	2128
31	2012	2015	2013							05		1	BO(WWV10-0.5,WWV15-0.2)	2010

COMMERCE - STANDARDS - BOULDER

SCNA-SEA-burst records from MC, HA and MA not as yet received for January 1965.

# RIOMETER EVENTS

III

JANUARY 1965

FROBISHER BAY

30 Mc's

JAN. 1965	START UT	END UT	MAX. UT	MAX. ABSORP. db, (tenths)	NO. OF PEAKS	JAN. 1965	START UT	END UT	MAX. UT	MAX. ABSORP. db, (tenths)	NO. OF PEAKS
1	*					20	***	2150	2129	3	1
2	*					21	*				
3	0040	0148	0052	34	2	22	0640	0750	0645	17	2
3	1618	***	1644	20	7	22	1050	1314	1139	4	1
4	*					23	**				
5	**					24	**				
6	2314	0410	0330	12	2	25	**				
7	1400	1733	1612	5	3	26	**				
8	**					27	**				
9	1212	1628	1356	7	1	28	**				
10	**					29	0204	0252	0213	14	2
11	*					30	**				
12	**					31	**				
13	0132	0412	0200	40	9						
14	1010	1653	1446	8	6						
15	1100	1521	1236	7	1						
16	**										
17	*										
18	*										
19	0302	0447	0350	11	5						

COMMERCE - STANDARDS - BOULDER

\* No Event  
 \*\* No Data  
 \*\*\* Uncertain

IVa

# SOLAR RADIO EMISSION OUTSTANDING OCCURRENCES

FEBRUARY 1965

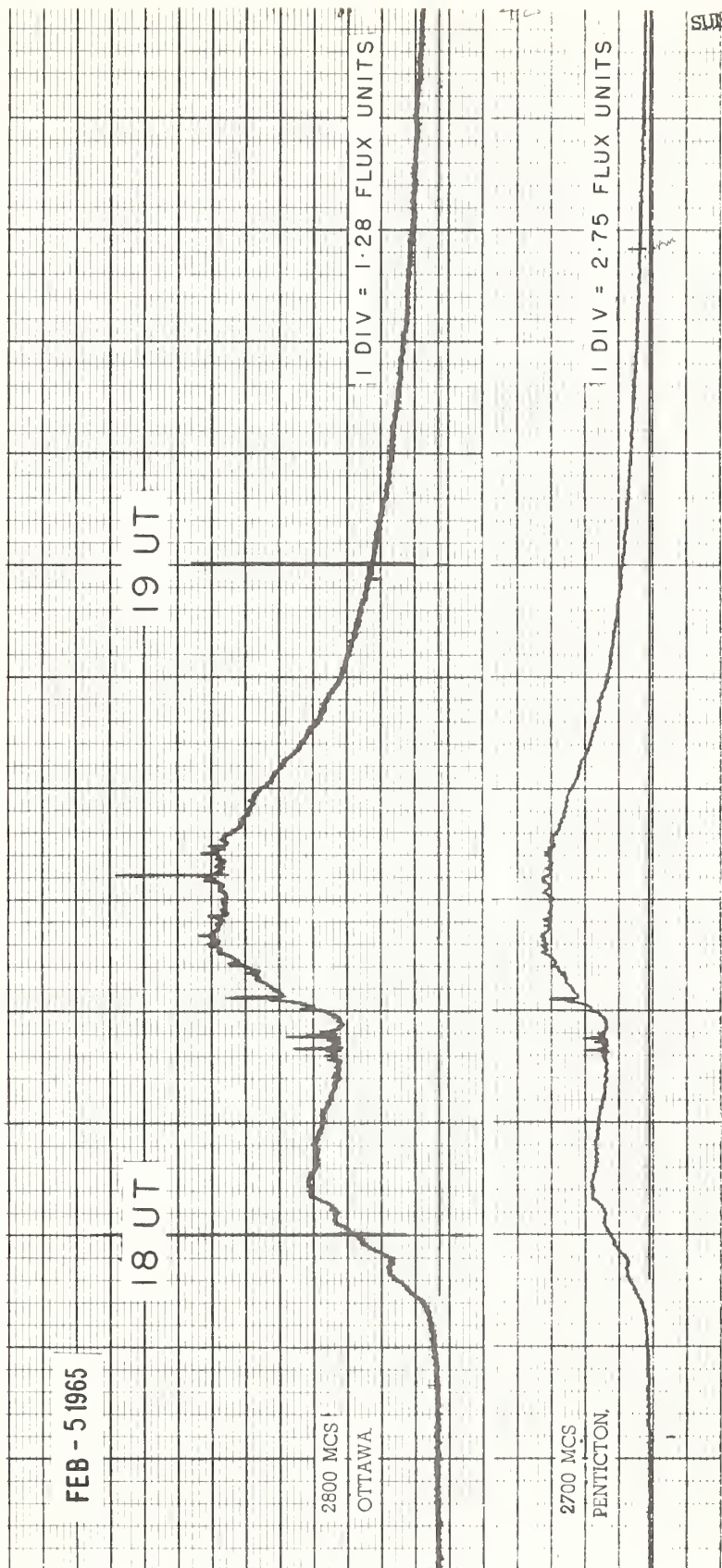
ARO-DRAO (OTTAWA)

2800; 2700 Mc/s

FEB 1965	U R A N E	DESCRIPTIVE TYPE	START UT	DURATION HRS MIN	MEAN FLUX	MAXIMUM		REMARKS
						TIME	FLUX	
2	3	Simple 3	1740	30	0.5	1747	1.0	
5	6	Complex f	1753	1 37	19.0	1826	43.0	
	4	Post increase		1 30	3.0		6.0	
7	3	Simple 3 f	1821	2 15	2.2	1823	4.4	

COMMERCE - STANDARDS - BOULDER

# SELECTED 2800 Mc/s SOLAR NOISE BURSTS ARO - OTTAWA, CANADA



COMMERCE - STANDARDS - BOULDER

# SOLAR RADIO EMISSION INTERFEROMETRIC OBSERVATIONS

NANÇAY

169 Mc/s

The equipment at Nançay is being modified and data on 169 Mc/s will be unavailable until further notice.

COMETEC - STANDARD - ROLANDER

# SOLAR RADIO EMISSION OUTSTANDING OCCURRENCES

IVd

FEBRUARY 1965

NBS BOULDER

108 Mc/s

Feb. 1965	TYPE	START UT	TIME OF MAXIMUM UT	DURATION MINUTES	INTENSITY
2	3	1858.5	1859.2	2.0	3
2	3	2031.1	2031.6	0.8	2
2	2	2050.7	2052.0	2.1	2
2	8	2210.0	2210.5	3.0	3
2	2	2247.5	2247.5	4.5	2
5	9A	1757	1800.0	5.0	3
5	9B	1802	1824	110	2
8	7	1650	--	130	1

## NOMINAL TIMES OF OBSERVATION

FEBRUARY 1965

NBS BOULDER

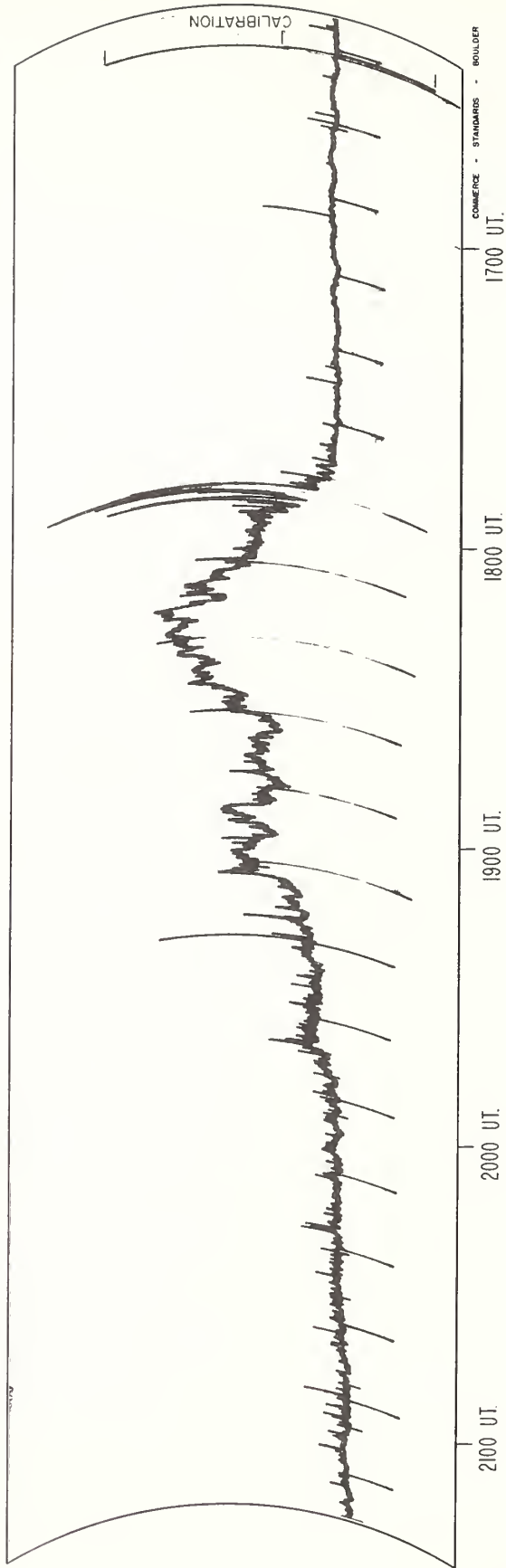
108 Mc/s

Feb. 1965	HOURS OF OBSERVATION U.T.	HOURS OF INTERFERENCE U.T.	Feb. 1965	HOURS OF OBSERVATION U.T.	HOURS OF INTERFERENCE U.T.
1	1414-0004	2259-0004	16	1357-0022	1549-1718
2	1413-0005		17	1356-0023	
3	1412-0006		18	1354-0024	
4	1411-0008		19	1353-0025	1600-1645
5	1410-0009		20	1352-0026	
6	1409-0010	1658-1833; 1923-1926 1856-1930	21	1350-0028	1545-2023
7	1408-0011		22	1349-0029	
8	1407-0012		23	1348-0030	
9	1406-0014		24	1346-0031	
10	1404-0015		25	1345-0032	
11	1403-0016		26	1343-0033	1437-1440
12	1402-0017		27	1342-0034	
13	1401-0018		28	1340-0036	
14	1400-0019				
15	1358-0021				

COMMERCE - STANDARDS - BOULDER

**SOLAR NOISE BURSTS**

FEBRUARY 5, 1965

**BOULDER****108 Mc s**

# SOLAR RADIO EMISSION SPECTRAL OBSERVATIONS

IVf

FEBRUARY 1965

High Altitude Observatory  
Boulder

7.6-41 Mc/s

Date Feb 1965	Bursts			Frequency Range (Mc/s)	Date Feb 1965	Bursts			Frequency Range (Mc/s)
	Type	Time (U.T.)	Inten- sity			Type	Time (U.T.)	Inten- sity	
1 Feb	no observ.	1400-1733			2 Feb	III	2250:45-2251:30	1-	21-41
	III	2216:30-2216:45	1-	21-41		III	2308:30-2308:45	1-	24-36
	III	2224:30-2225	1	20-41		III	2312:45-2313:15	1-	30-41
	III	2241:45-2242:30	1	20-41		III	2313:30-2313:45	1-	30-41
2	III	1512-1512:15	1-	20-41		III	2313:15-2315	1+	16-41
	III	1512:30-1512:45	1	20-41		III	2317:15-2317:30	1-	22-41
	III	1529:15-1530	1+	15-41	3	no observ.	1400-1540		
	III	1613:30-1614:15	1	16-41		III	1559-1559:45	1-	21-41
	III	1614:30-1614:45	1-	20-41		III	1904:45-1905:30	1	20-41
	III	1615-1615:45	1	16-41	4	no observ.	1755-1900		
	III	1706:45-1707	1	24-41	5	no observ.	1543-1755		
	III	1707:15-1707:45	1+	16-41		III	1755-1759:15	1+	24-41
	III	1708:15-1708:45	1	20-41		II	1800-1817	2	14-41
	III	1709:30-1709:45	1-	20-41		IV	1810-1905	1	22-41
	III	1710-1710:15	1-	21-41		continuum	1905-2100	1	22-41
	III	1744:30-1744:45	1-	19-41	7	no observ.	1400-2330		
	III	1747-1747:15	1-	21-41	8	no observ.	1400-1615		
	III	1814:30-1815	1-	20-26	10	no observ.	1400-1700, 2100-2330		
	III	1824:15-1824:45	1-	21-41	11	III	2223:30-2223:45	1	23-41
	III	1859:30-1901:45	1+	20-41		III	2228:45-2229:15	1	23-41
	III	1949:15-1949:45	1-	21-41	12	no observ.	1400-1900		
	III	2005-2005:15	1-	26-41	14	III	1722-1722:15	1-	15-41
	III	2031:30-2032:15	1+	08-41		III	1809-1809:15	1-	18-41
	III	2051-2053	2	12-41		III	1910:30-1919:45	1-	21-41
	III	2054:45-2055	1-	29-41		III	2151:45-2152	1-	22-37
	III	2059:45-2100:15	1-	19-41	15	no observ.	1500-1639		
	III	2103-2103:15	1-	20-41	20	III	2005:45-2006:15	1-	22-41
	III	2128:30-2129	2	16-41	24	no observ.	1500-2330		
	III	2206:15-2206:30	1-	16-41	25	no observ.	1500-2330		
	III	2207:45-2208:15	1	16-41	26	no observ.	1500-1940		
	III	2210:30-2211:30	2	15-41					
	III	2212-2212:30	1-	22-41					
	III	2236-2236:30	1	20-41					
	III	2247:45-2248:15	1	20-41					
	III	2249:45-2250:15	1+	20-41					

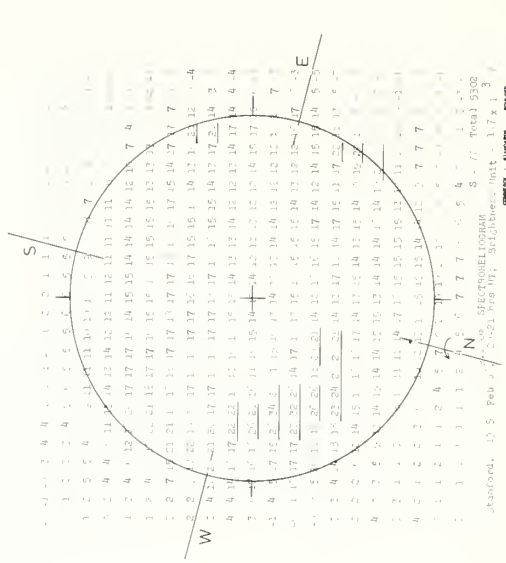
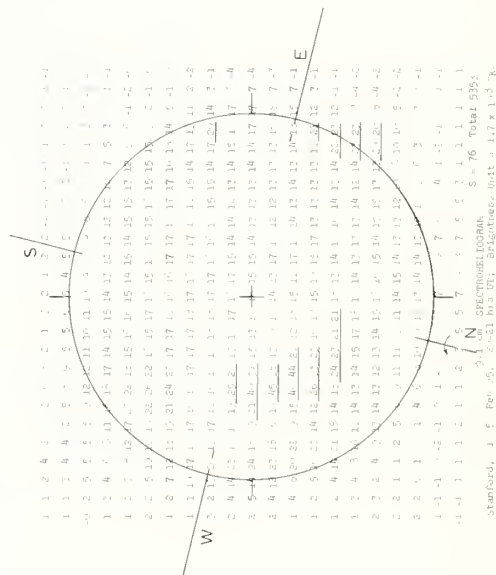
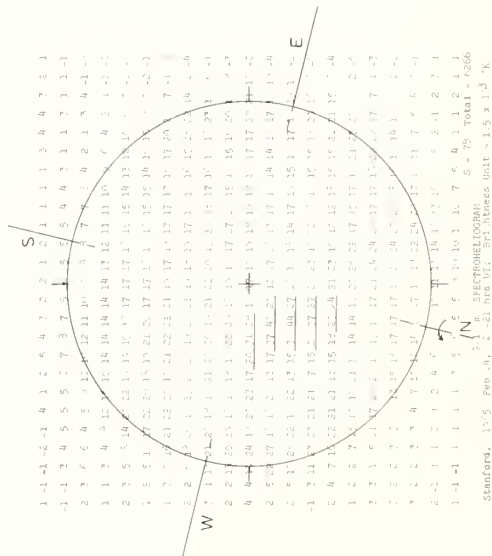
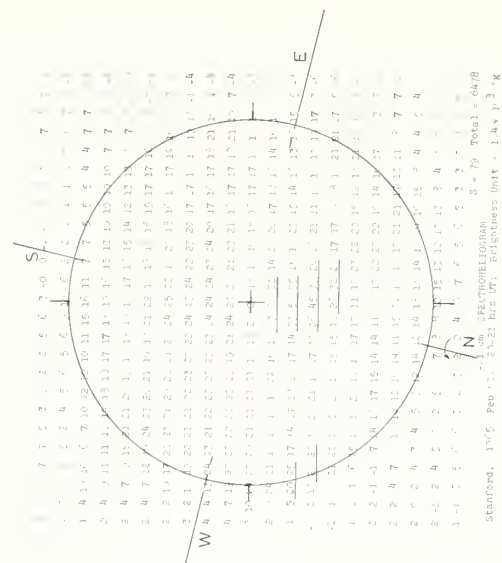
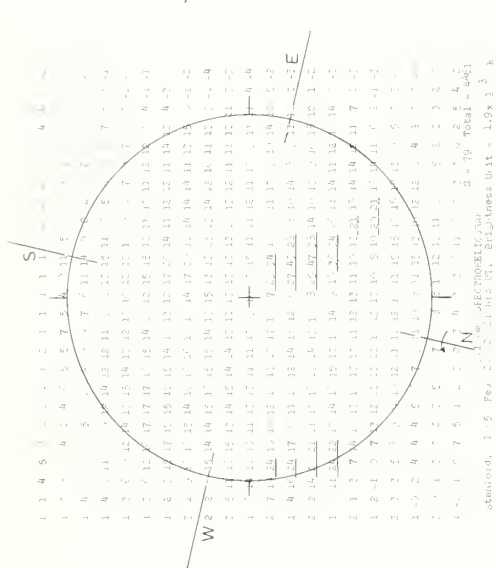
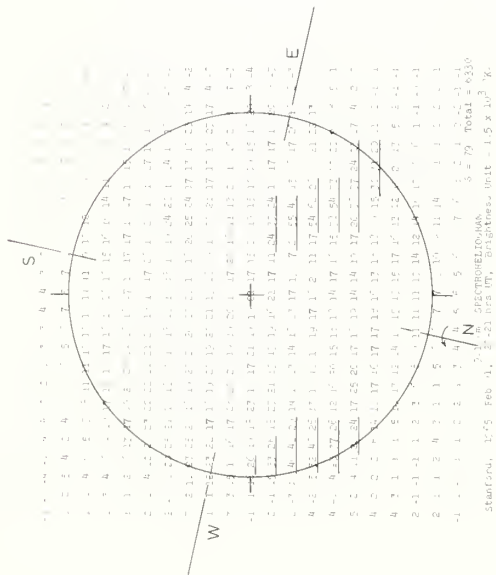
COMMERCE - STANDARDS - BOULDER

## SOLAR RADIO EMISSION SPECTROHELIOGRAMS

FEBRUARY 1965

STANFORD

## 9.1 cm

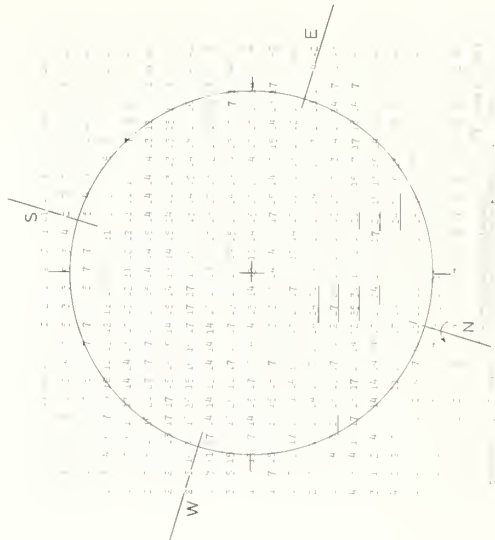
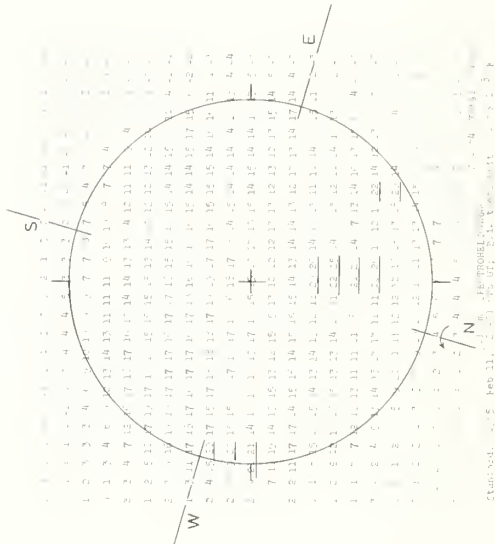
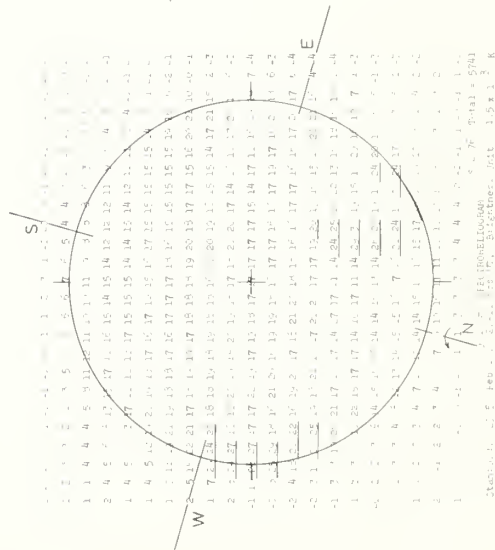
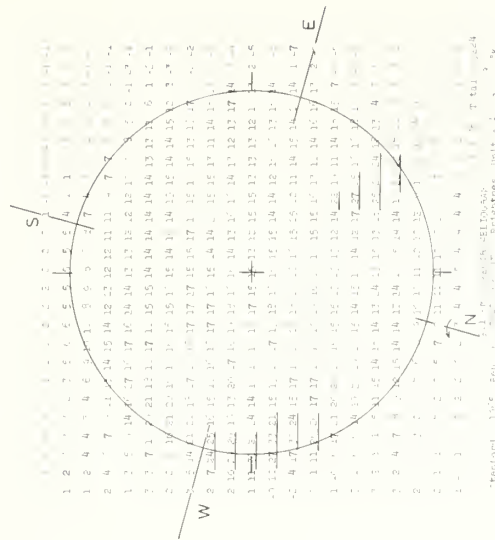
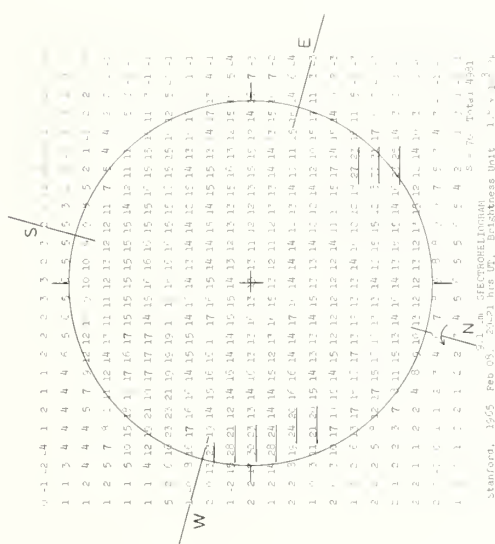
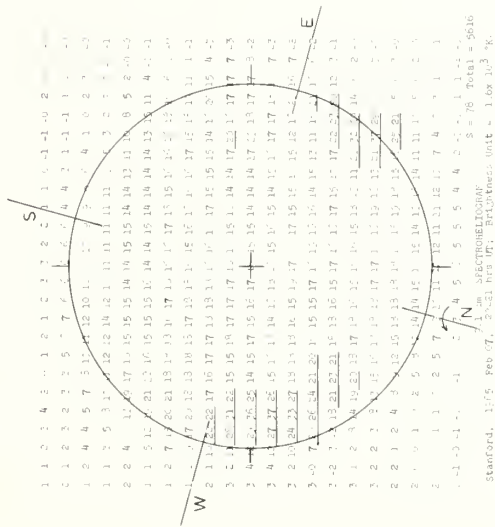


# STANFORD

## SOLAR RADIO EMISSION SPECTROHELIOGRAMS

FEBRUARY 1963

9.1 cm

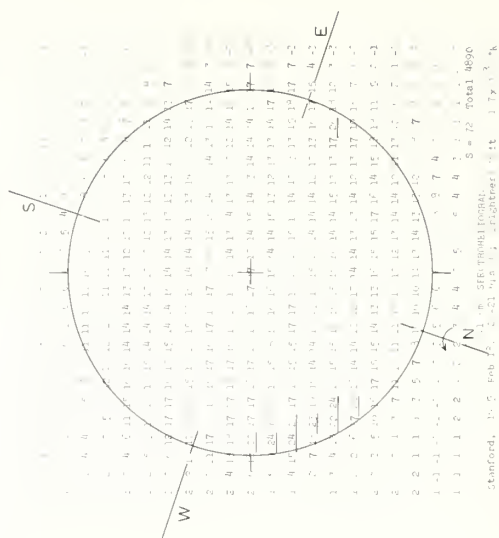
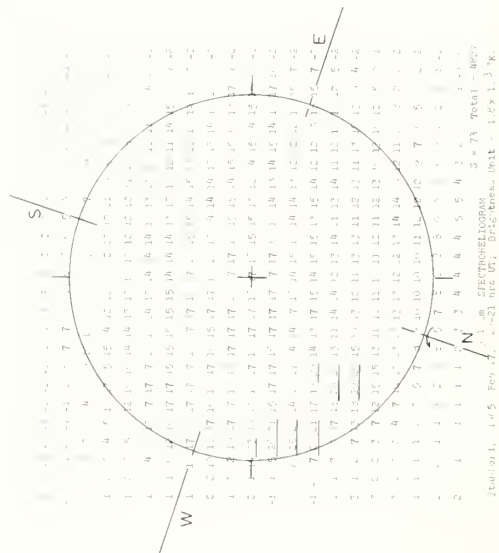
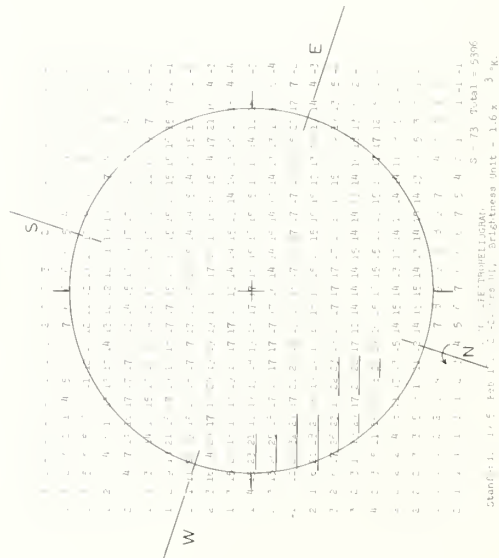
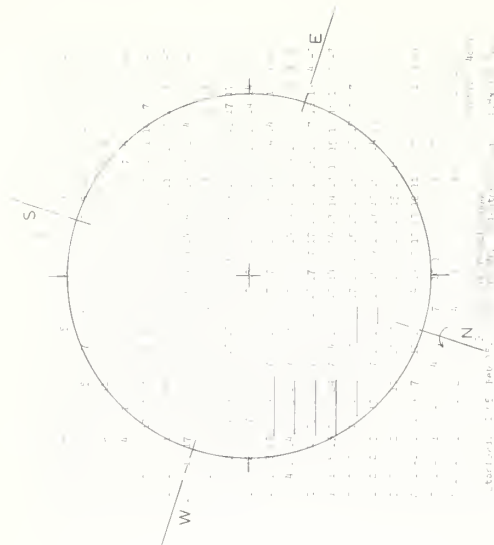


## SOLAR RADIO EMISSION SPECTROHELIOGRAMS

FEBRUARY 1965

STANFORD

## 9.1 cm

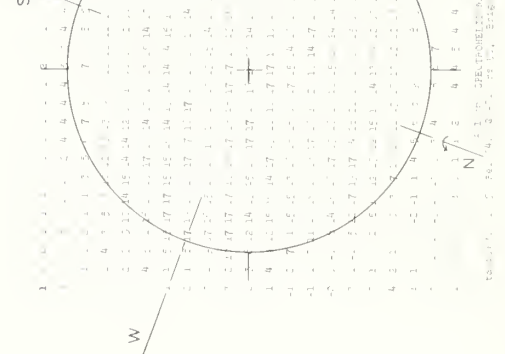
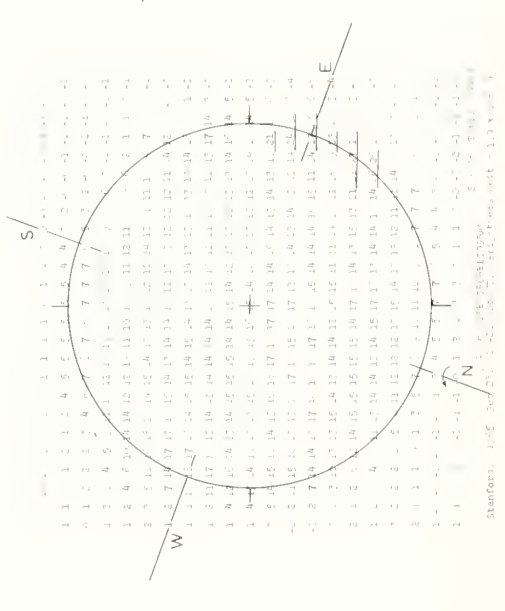
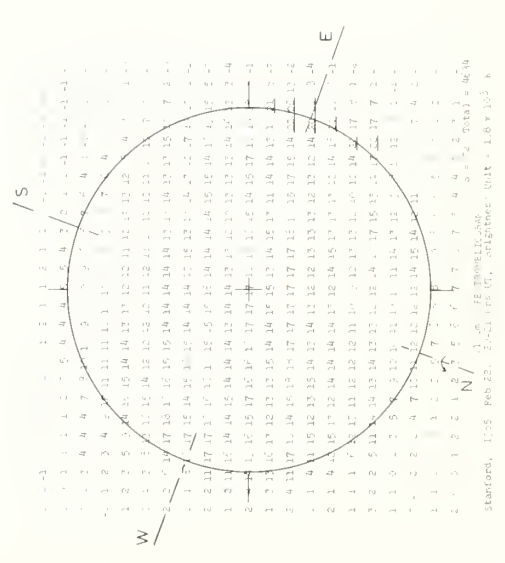
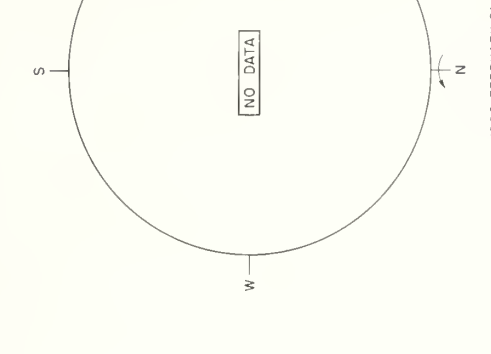
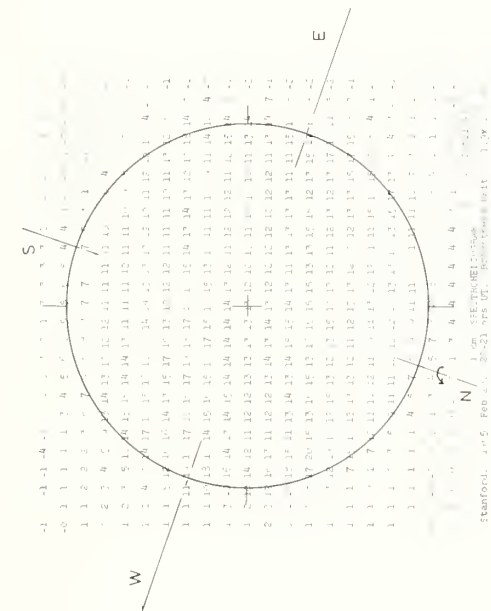
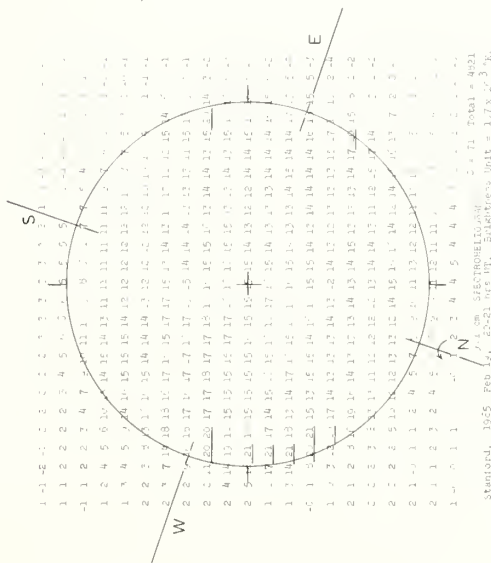


# SOLAR RADIO EMISSION SPECTROHELIOGRAMS

FEBRUARY 1965

STANFORD

9.1 cm

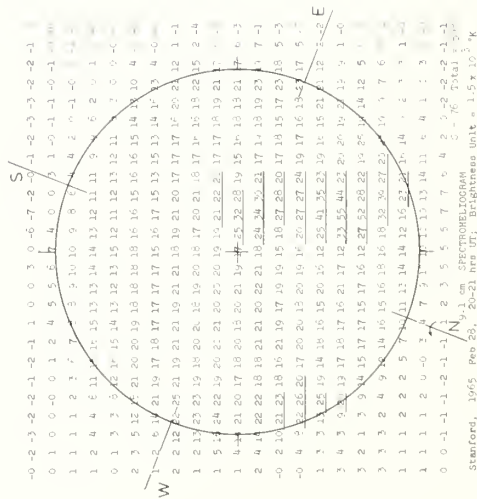
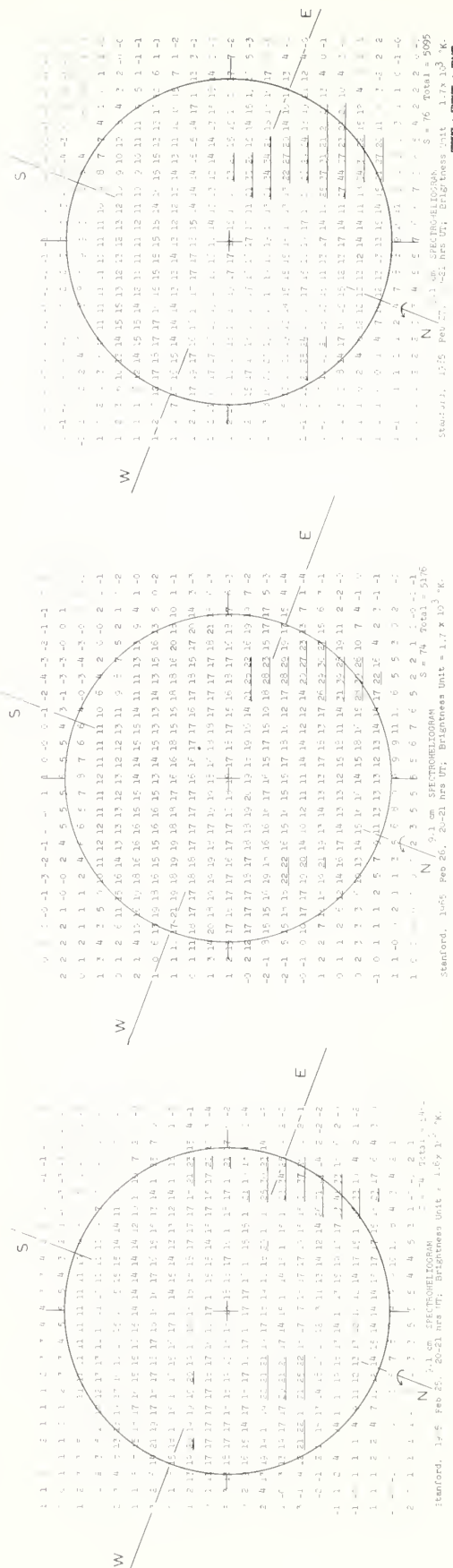


## SOLAR RADIO EMISSION SPECTROHELIOGRAMS

FEBRUARY 1965

STANFORD

9.1 cm





# COSMIC RAY INDICES

## (Neutron Monitors)

JANUARY 1965

JAN. 1965	CHURCHILL	CLIMAX	DALLAS
	DAILY AVERAGE COUNTS PER HOUR	DAILY AVERAGE COUNTS PER HOUR	DAILY AVERAGE COUNTS PER HOUR
1	6588.5	3377.2	6620.8
2	6570.8	3378.1	6619.2 (18)
3	6552.9	3380.5 (38)	6625.7
4	6559.4	3369.3	6624.1
5	6580.7	3363.3	6602.8
6	6582.0 (19)	3364.2	6608.1
7	6593.6 (23)	3376.0	6616.6 (23)
8	6603.3 (22)	3379.0	6616.5
9	6586.5 (21)	3367.4	6608.0 (20)
10	6590.3 (22)	3359.1	6616.0
11	6606.1	3368.4 (38)	6631.6
12	6608.3	3370.3	6636.9
13	6545.9	3362.0	6620.7
14	6550.8 (23)	3352.1	6614.0
15	6469.6 (22)	3307.7	6572.7
16	6479.4 (23)	3311.4	6590.6
17	6495.3 (23)	3324.8	6604.8
18	6490.7 (23)	3323.7	6595.0
19	6531.9 (20)	3332.2	6599.9
20	6534.3	3353.7	6606.9
21	6486.7	3332.1	6558.4
22	6500.5	3348.3	6566.0
23	6500.7	3353.2	6598.6
24	6560.1	3360.4	6605.4
25	6570.0	3374.1	6590.1
26	6571.0	3357.1	6603.6
27	6573.7	3347.9	6618.4
28	6569.0	3357.3	6625.8
29	6569.4	3360.0	6639.9
30	6559.5	3357.7	6627.9
31	6589.0	3361.8	6628.0

COMMERCE - STANDARDS - BOULDER

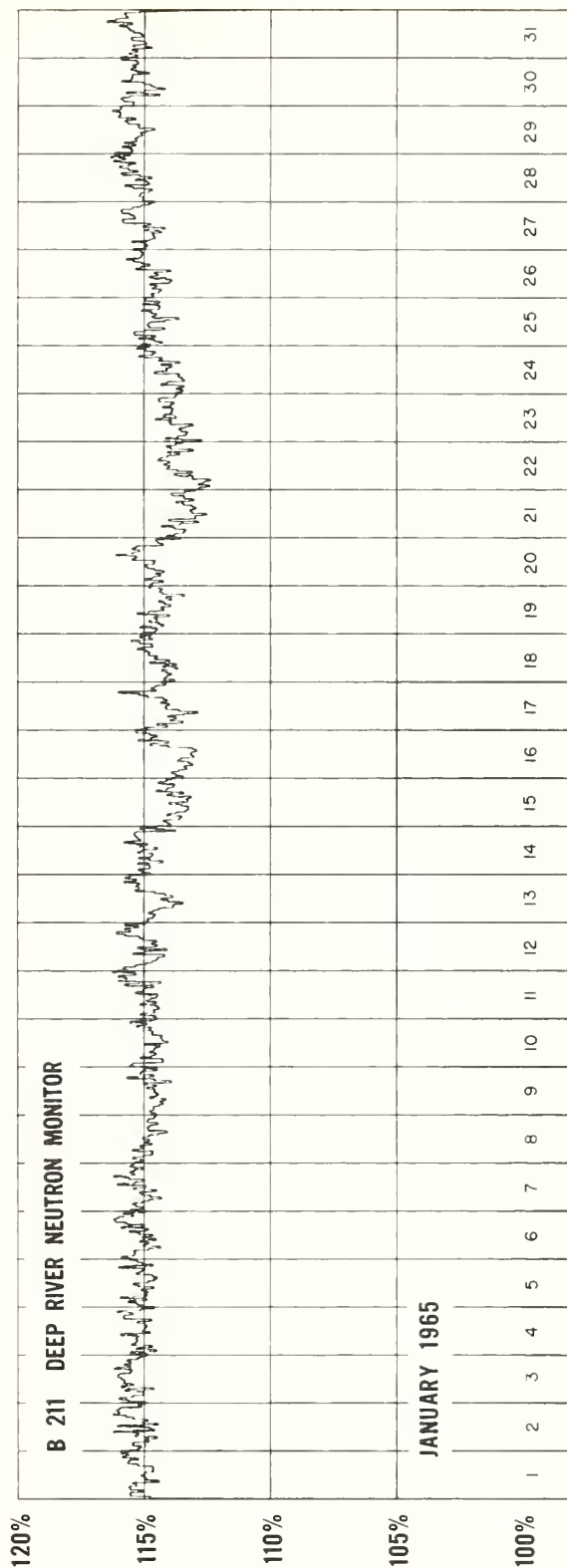
( ) Number of hours for which data are available if less than 24 (or number of section hours if less than 40 for Climax).

Churchill Super Neutron Monitor, Scaling Factor 120.

Climax IGC Station B305, Scaling Factor 128

Dallas Super Neutron Monitor, Scaling Factor 120.

# **COSMIC RAY INDICES** (Pressure Corrected Hourly Totals)



COMMERCE - STANDARDS - BOULDER

## GEOMAGNETIC ACTIVITY INDICES

JANUARY 1965

JAN. 1965	C	Values Kp								Sum	Ap	Final Selected Days
		Three hour Gr. interval										
		1	2	3	4	5	6	7	8			
1	0.1	0o	1-	1-	0+	0+	1o	1o	2-	6-	3	Five Quiet
2	0.8	2+	2o	1+	2o	3o	3o	3-	3+	20-	11	
3	0.4	4o	0+	1+	1o	0+	3-	1-	1-	11o	7	
4	0.2	1o	0o	1-	1o	1+	1o	2o	2-	9-	4	
5	0.1	1+	0o	0o	0+	1-	2o	0o	1-	5o	2	
6	0.0	1-	0o	1-	1-	1-	0o	0+	1-	4-	2	16
7	0.3	0o	1+	0+	1-	2-	2+	1o	2o	9+	4	24
8	1.0	4+	1+	2+	3-	3+	3-	2-	3-	21o	13	25
9	0.6	1+	3-	1o	1-	1+	1+	2o	3+	14-	7	
10	0.4	1o	1o	1o	1-	1+	2o	2-	2+	11o	5	
11	0.0	1+	1o	0o	0o	0+	0+	0o	0+	3+	2	Five Disturbed
12	0.8	1o	2-	1o	3o	3+	3+	2+	4-	19+	12	
13	0.7	4+	4-	3-	2o	2+	2+	2o	1+	21-	13	
14	0.3	2-	2+	2-	2+	2+	2-	1-	1-	13+	6	
15	0.3	1+	2+	1o	2o	2-	2-	2-	1-	12+	6	
16	0.0	0+	0o	1-	1-	1-	1-	0+	2-	5o	3	12
17	0.8	2-	0+	1-	2+	4-	3+	3-	3-	17+	10	13
18	0.3	1-	3-	2-	1o	0+	1-	1o	2-	10-	5	22
19	0.2	2-	2-	1+	0o	0+	0+	1-	3-	9-	4	
20	0.6	1o	0+	1-	0o	0o	2o	3o	4o	11o	7	
21	0.8	4o	4o	1+	0+	1+	1-	1+	1+	14+	10	Ten Quiet
22	1.2	3-	4-	6-	3-	3-	3o	2+	2o	25-	20	
23	0.4	2o	3-	2+	2o	1+	1-	2-	2o	15-	7	
24	0.0	1o	0+	0+	0o	0+	0o	0+	1-	3o	2	
25	0.0	1-	1+	0+	0o	0o	0o	0+	1-	3+	2	
26	0.2	1-	0o	1+	1+	1o	1o	0o	0+	6-	3	5
27	0.3	1+	2+	2-	1-	1+	2o	1o	2o	12+	6	6
28	0.3	2+	1-	0+	1+	2-	0+	2-	2-	10o	5	11
29	0.2	3-	1o	0+	1-	1o	1o	1-	2o	9+	5	16
30	0.2	3-	1+	1-	2-	1-	1-	0o	1-	8+	4	24
31	0.2	1o	1-	0o	1-	0o	0o	1+	2-	5+	3	25
												26
												31
Mean:	0.38									Mean:	6	



NORTH ATLANTIC, NORTH PACIFIC

JANUARY 1965

JAN 1965	WHOLE DAY INDICES			ADVANCE FORECASTS (Jc- REPORTS) FOR WHOLE DAY	NORTH ATLANTIC								NORTH PACIFIC			GEOMAGNETIC INDICES								
					6 - HOURLY QUALITY FIGURES				SHORT - TERM FORECASTS ISSUED ABOUT ONE HOUR IN ADVANCE OF				8 - HOURLY QUALITY FIGURES			K <sub>PN</sub>		A <sub>PN</sub>		K <sub>SI</sub>		A <sub>SI</sub>		
	NORTH ATLANTIC	NORTH PACIFIC	AVERAGE HIGH LATITUDE		00 TO 06	06 TO 12	12 TO 18	18 TO 24	00 TO 06	06 TO 12	12 TO 18	18 TO 24	03 TO 11	11 TO 19	19 TO 03	HALF (1)	DAY (2)	OB- SERVED	PRE- DICTED	HALF (1)	DAY (2)			
1	60	6	6	6	5+	60	7-	6+	6	6	7	7	5	5	6	0	1	1	3	0	1	2		
2	60	5	6	6	6-	6-	7-	6-	6	6	7	6	5	5	6	2	2	9	3	2	2	8		
3	60	6	6	6	6-	50	6+	6+	6	5	7	6	6	5	7	1	1	5	5	1	0	3		
4	6+	6	6	6	6-	6-	7-	7-	6	5	7	6	5	5	6	1	1	2	5	0	1	3		
5	6+	5	6	6	6-	6-	7-	7-	6	6	7	7	5	5	6	0	1	2	3	0	1	2		
6	60	5	6	6	6-	6-	7-	6+	6	6	7	6	6	5	5	1	1	2	3	1	0	2		
7	6+	5	6	6	60	6-	7-	7-	6	6	7	6	5	5	6	1	1	2	3	0	2	4		
8	60	5	6	6	6-	60	7-	6+	6	6	7	6	5	5	6	2	1	7	3	2	2	11		
9	6+	6	6	6	60	6-	7-	6+	6	6	7	7	6	5	6	1	2	4	5	1	1	3		
10	6+	5	6	6	60	6-	7-	6+	6	5	7	7	5	5	5	1	1	3	5	0	2	3		
11	60	5	6	6	6-	5+	7-	7-	6	5	7	6	5	5	5	1	0	1	7	1	0	2		
12	60	5	6	6	6-	6-	7-	6+	6	6	7	6	5	5	5	2	3	9	11	1	3	12		
13	60	5	6	6	5+	60	7-	7-	6	5	7	7	5	5	5	3	2	10	7	2	1	6		
14	6+	6	6	6	60	6-	7-	7-	6	6	7	7	6	5	6	2	2	5	5	2	1	5		
15	60	5	6	6	60	5+	7-	7-	6	6	7	7	5	5	5	2	1	4	5	1	1	4		
16	60	5	6	6	60	5+	7-	7-	6	6	7	7	5	5	6	1	1	2	3	1	1	3		
17	6+	5	6	6	60	60	7-	7-	6	6	7	7	5	5	5	2	3	9	3	1	3	11		
18	60	6	6	6	6-	5+	7-	6+	6	5	7	7	5	5	6	2	0	4	3	1	0	3		
19	60	5	6	6	60	5+	7-	6+	6	6	7	7	6	5	6	1	1	3	3	1	0	2		
20	60	5	6	6	6-	50	7-	6+	6	5	7	6	5	5	6	1	2	7	3	0	2	4		
21	60	6	6	6	5+	5+	7-	7-	6	5	7	6	5	5	7	2	1	5	5	1	0	3		
22	6-	6	6	6	60	5-	6+	6-	6	5	7	6	5	5	6	3	2	11	5	3	2	19		
23	6-	5	5	6	6-	40	7-	6+	6	5	6	7	5	5	5	2	1	6	5	2	1	4		
24	6-	5	5	6	5+	50	6+	6+	6	5	7	7	5	5	6	0	0	0	3	0	0	0		
25	60	5	6	6	6-	5+	7-	60	6	5	7	7	5	5	6	1	0	2	3	0	0	1		
26	60	5	6	6	6-	5+	7-	6+	6	5	7	7	5	5	6	1	1	2	3	0	0	1		
27	60	6	6	6	6-	60	7-	60	6	5	7	7	5	6	6	1	2	4	5	1	1	3		
28	6+	6	6	6	6-	60	7-	7-	6	5	7	6	7	5	6	1	1	4	3	1	1	2		
29	6+	6	6	6	60	60	7-	6+	6	6	7	6	6	6	6	1	2	5	7	0	1	2		
30	6+	6	6	6	6-	6-	7-	70	6	6	7	6	5	6	7	2	1	3	5	1	0	2		
31	7-	6	6	6	6+	60	70	70	6	6	7	7	5	6	7	0	1	1	5	0	0	1		
SCORES																								
QUIET PERIODS: P																								
S																								
U																								
F																								
DISTURBED PERIODS:																								
P																								
S																								
U																								
F																								

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## NOTES:

1. The advance Jc forecasts are scored against the average high latitude whole day indices.
2. The observed indices for the North Pacific are low weight because of insufficient data available for their preparation.
3. The predicted A<sub>PT</sub> indices are issued each Wednesday for the coming seven days. The value for the first day of each prediction period is underscored.

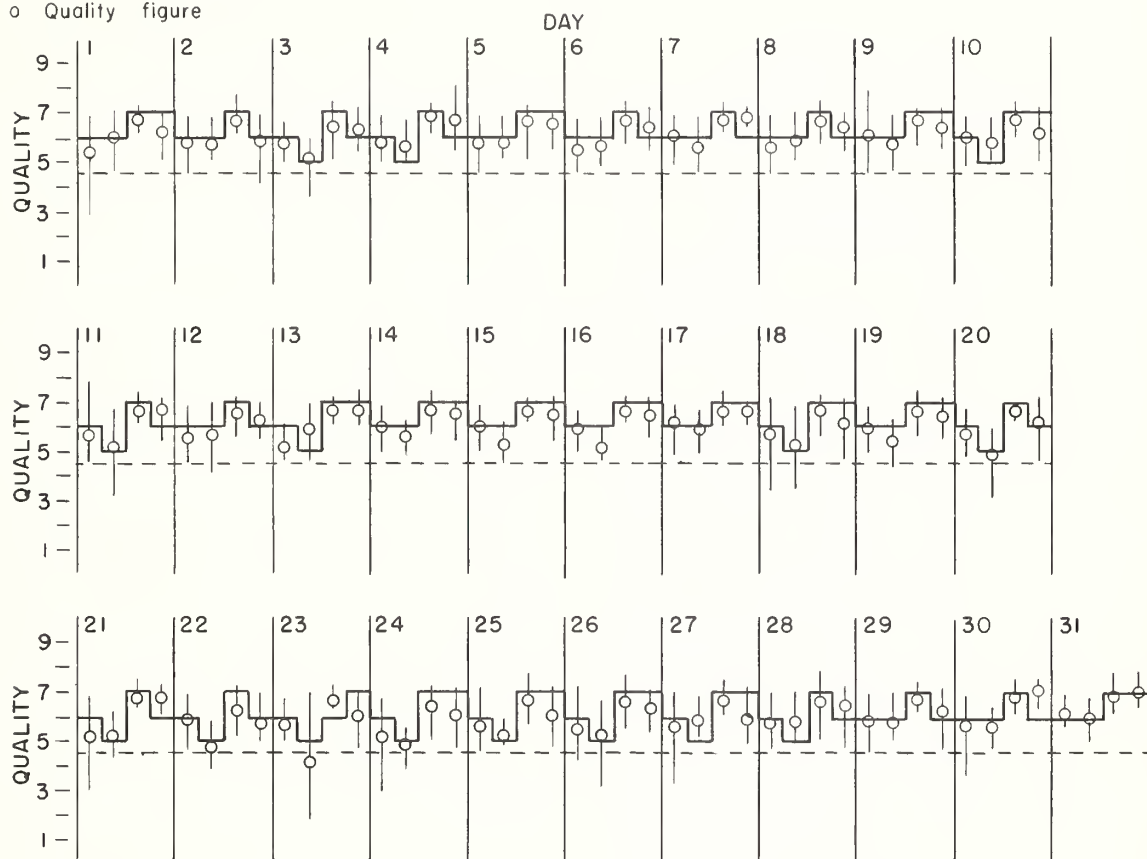
## NORTH ATLANTIC

JANUARY 1965

— Short-term forecast

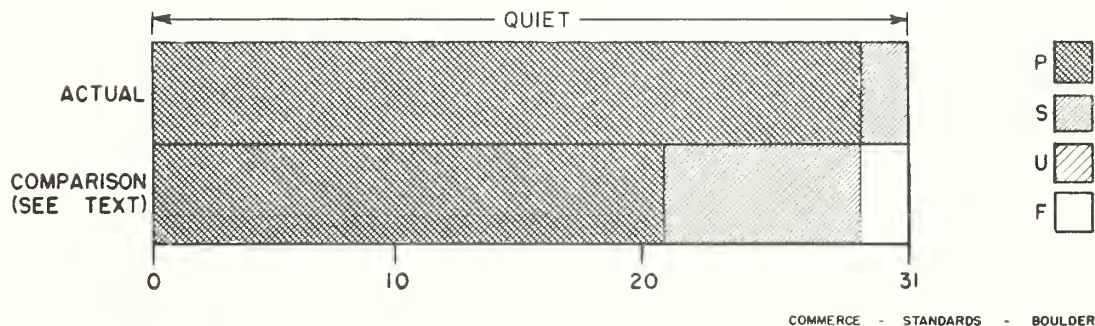
o Quality figure

I Range of reports



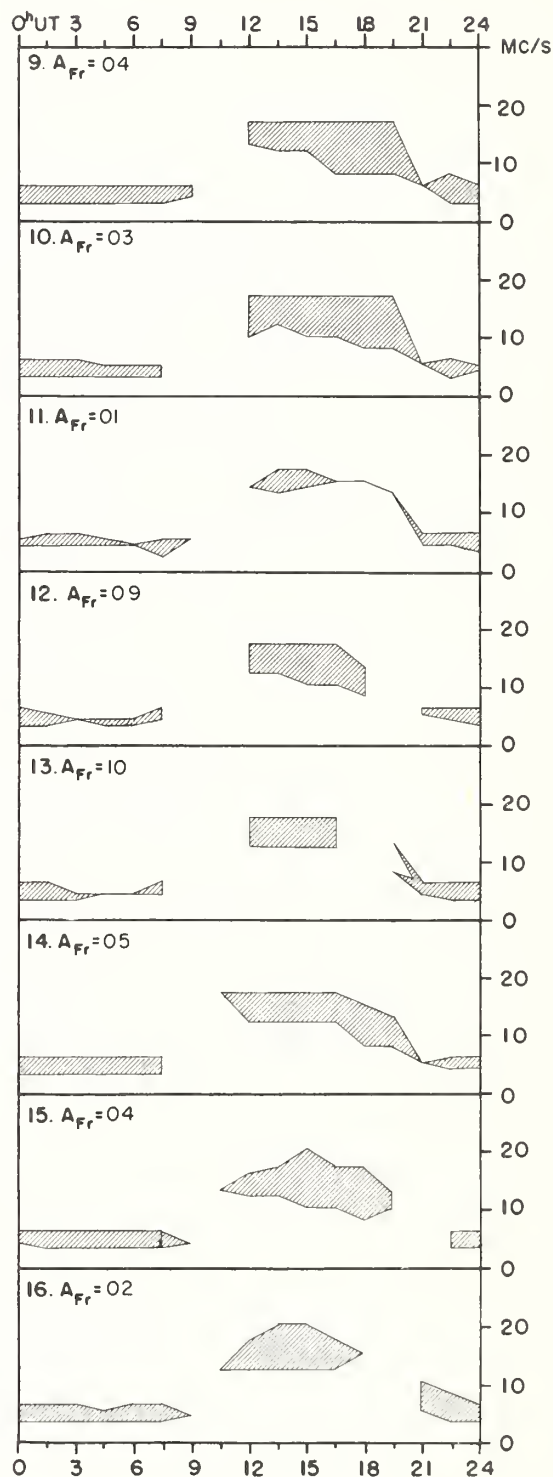
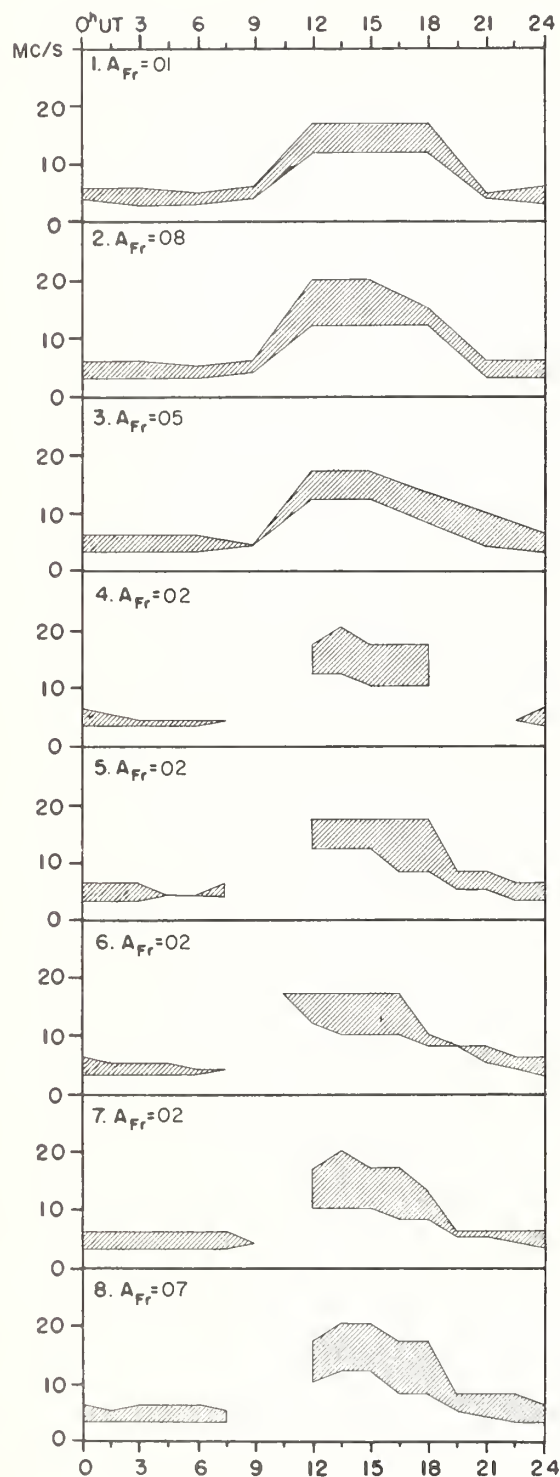
OUTCOME OF ADVANCE FORECASTS--FINAL ESTIMATES (1 TO 7 DAYS AHEAD)

## HIGH LATITUDE

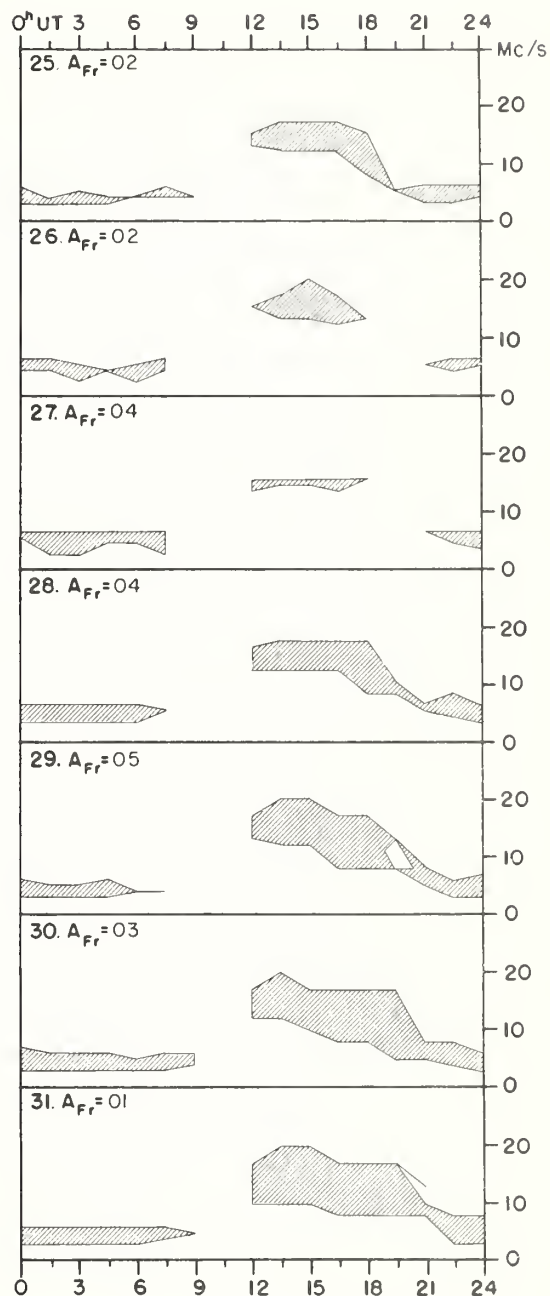
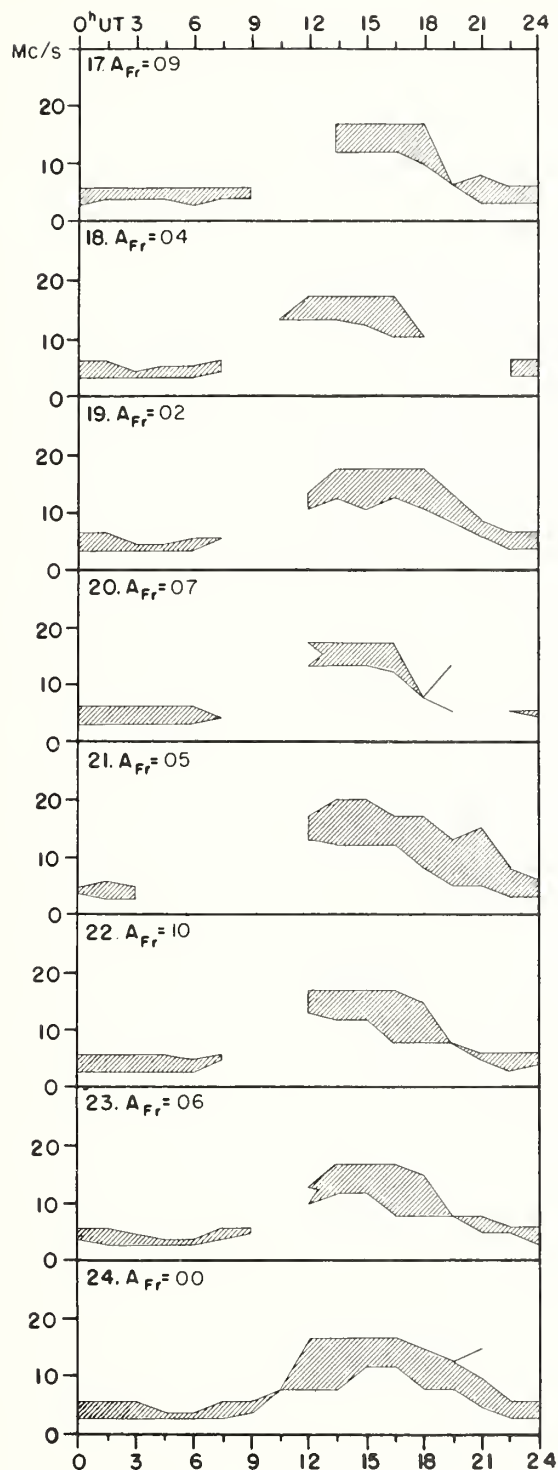


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Adapted from Observations by Deutsches Bundespost

## IQSY ALERT PERIODS

INTERNATIONAL URSIGRAM  
AND WORLD DAYS SERVICE

FEBRUARY 1965

FEB 1965	TIME OF ISSUE UT	ADVANCE GEOPHYSICAL ALERT	WORLDWIDE GEOPHYSICAL ALERT			
			NO.	TYPE	TIMING	ELABORATION
5	1840	Sac Peak, Solar Flare 05/1800Z				
6	0400		161	Solar Activity	Exists	
7	0400		162	Magnetic Storm	Expected	
8	0400		163	Solar Activity	Exists	
9	0400		164	Solar Activity	Exists	

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